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IMPROVE VOCATONAL TRANING TO SOLVE SKILLED WORKERS SHORTAGE IN CHINA

DING JIA

Master of Business Administration

35102321-9

GRADUATE SCHOOL OF COMMERCE

WASEDA UNIVERSITY

C.E.

PROF. AIBA KOJI

D.E.

PROF. AIRANO MASAACKI

PROF. SUGIURA MASAKAZU

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CHAPTER 1. INTRODUCTION

Section 1. BACKGROUND

China has been taking the advantage of a big population for a long time. Thanks to the continuing supply of low-cost labors, the economy experienced remarkable development and became the world workshop. However, the advantage of population cannot be kept forever. With the Lewis Turning Point coming, the era of limitless rural labor supply is over. A direct result of the population change is so-called “rural migrant labor shortage” starting in 2004 and getting worse after 2010.

In coastal regions which are the main destinations of rural migrant labors, lots of enterprises especially SMEs are either confronted with the difficulty in recruiting proper labors or forced to raise labors’ wage level. Both have thrown a big threat on enterprises’ survival and growth. The economy is now at a transition stage from relying on low-cost labors to a more sustainable development road. Enterprises are forced to produce high value-added products and improve the product quality to increase their competitiveness. During this process, a large number of high-quality human resources are extremely needed. Among them, skilled workers play an indispensable role.

However, the current skilled workers supply cannot meet the demand of the labor market. There is a serious shortage of skilled workers on the labor market. At present, the major labor supply is from rural migrant workers. In some time to come, it will be the same case. These workers are in lack of skills and have low labor quality. They cannot meet the requirement of the economic transition and enterprises development. At the same time, the workers themselves are struggling to pursue more stable employment and integrate into urban areas. They have brought about higher employment need.

Under this situation, improving labors quality has a significant meaning for employment promotion and economic growth. Whether or not the large number of labors can be transformed to competent workers will have a strong influence on China’s future development.

In order to improve workers’ skill levels and simultaneously relieve the employment pressure, China is implementing vocational training as a long-term strategy for developing human resources

and promoting economy. Vocational training is a training designed to prepare individuals for a vocation or a specialized occupation by providing practical skills, knowledge and attitude. It is directly linked with a nation's productivity and competitiveness. Successful vocational training operation will benefit the development and advancement of China in a long term.

Section 2. OBJECTIVE

Vocational training is an important strategy for human resources development and economic growth for China. At the same time, it is also a complicated systemic project. This thesis tries to point out the problems facing vocational training and then give recommendations to the government to improve it.

Section 3. TERMINOLOGY

1) Rural migrant workers: refer to workers transferred from the primary industry in rural areas to second and tertiary industry in urban areas. In the past twenty years, most of rural migrant workers flooded into eastern coastal cities where the economy is more advanced than central and western areas. But in recent years, some central and western big cities have also become destinations of rural migrant workers. Usually, a rural migrant worker works in cities, while his residence registration which is relevant to education, medical care and other social welfare remains in his hometown¹.

2) Vocational training: Vocational training is designed to prepare individuals for a vocation or a specialized occupation by providing practical skills, knowledge and attitude. It focuses on practical applications of skills learned, and is generally unconcerned with theory or traditional academic skills.

A similar concept is vocational education. Internationally, vocational education and training (VET) that refers to both activities is broadly used in relevant researches. It is hard to separate the

¹ China is implementing household registration system. Under the system, citizens are grouped into agricultural registered permanent residence or non-agricultural registered permanent residence. There are strict conditions for changing registered permanent residence. Recently, some provinces like Hebei, Liaoning are trying to change the system and implement a system without dividing agricultural and non-agricultural residences.

two concepts completely. By and large, vocational education can be seen as an initial training preparing for employment, while vocational training is open to workers in various career stages, although there are some crossing fields. Vocational education usually prepares graduates who are specialized in occupations, while the graduates of vocational training are skilled workers. In many countries, vocational education and vocational training belong to the same system. In China, however, they are two separated systems. The administration of vocational training belongs to the Ministry of Human Resources and Social Securities while vocational training, which is still seen as a branch of general education, is supervised by the Ministry of Education. In this thesis, we focus on vocational training, although some research results are from studies on VET.

Section 4. RESEARCH METHODOLOGY

- 1) Literature reviews: books and thesis on Lewis turning point, labor market and vocational training
- 2) Statistical data analysis: analysis of data about the demographics of China, labor market situation and vocational training situation. The data is from the National Bureau of Statistics, the Ministry of Human Resources and Social Security, and other research institutions.
- 3) Interviews: interview with people in charge of vocational training in the ministry, and interview with some enterprises.
- 4) Case study: study on vocational training in other advanced countries, including UK, France, Germany and Japan.

Section 5. STRUCTURE

Chapter 1

This chapter introduces the background of the thesis and some key concepts. Then it gives the research methodology and objective of the thesis, as well as the structure.

Chapter 2

This chapter analyzes the present labor market in China. It summarizes four characteristics of the labor market: the decline of population increasing rate and rise of wage level, a large number of labor supply transferred from rural areas, the structural shortage of skilled workers and the emergent labor needs for industrial structure optimization.

Chapter 3

This chapter analyzes the benefits of vocational training that are helpful to solve the problems in the labor market. It also makes case study on vocational training experiences in four economic advanced countries.

Chapter 4

This chapter introduces the situation of vocational training in China, including a brief history and the current situation. It then analyzes the problems of existing vocational training system and operation

Chapter 5

This chapter gives recommendations on five aspects of improving vocational training, including capacity, quality, market awareness, legislation and finance.

Chapter 6

This chapter is conclusion and future outlook.

CHAPTER 2. ANALYSIS ON CHINESE LABOR MARKET

In the past several years, some new issues in labor market of China, such as a sharp rise of labor cost and a broad shortage of labor supply, have attracted attentions worldwide and aroused heated discussion on Lewis turning point. There is no doubt that the labor market is passing a transiting stage. This transition will have an important influence on socioeconomic development of China. There are many characters in the transiting labor market. For the purpose of this thesis, we will abstract four aspects of the issue, namely, decline of population increasing rate and rise of wage level, the labor supply transferred from rural areas, the structural shortage of skilled workers and the labor needed for industrial structure optimization.

Section 1. DECLINE OF POPULATION IN INCREASING RATE

The labor market after 2004 is characterized by the serious rural labor shortage and wage level rise. People begin to review the country's population situation. A wide discussion on whether China has reached its Lewis turning point attracted the attention both inside and outside of the country.

Lewis turning point was introduced by Sir William Arthur Lewis in "Economic Development with Unlimited Supplies of Labor" in 1954. Lewis believed that at an early stage of development, there would be available an "unlimited" supply of labor from the subsistence economy which means that the capitalist sector can expand without the need to raise wages. While Lewis turning point is the point at which the excess labor in the subsistence sector is fully absorbed into the modern sector, and where further capital accumulation begins to increase wages. It marks a time in the development of an economy when a surplus of cheap labor runs dry.

The discussion on Lewis turning point got heated from 2004 in China. Some researchers believe that China has already reached Lewis turning point. The supporting proof is that the problem of the rural migrant labor shortage did not disappear or turn better, but even extended to more areas from 2004 on. In 2007, some central and western provinces also suffered from this shortage. It means that the labor supply is changing from unlimited supply to limited supply. Therefore, the

wage level of labors witnessed a sharp rise. At the same time, there is the other argument that the rural migrant labor shortage is short-term and structural. It means that the shortage happens in some regions, some industries or some posts requiring certain skill levels. In other regions, industries or posts, there is still labor surplus. In another word, the quantity of whole labor supply is not in shortage, but the allocation of labor caused the shortage. It does not mean that China has reached Lewis turning point. Researchers supporting this opinion think that with such a large number of rural labors, the market is not facing an absolute shortage of labor. They believe the real coming of Lewis turning point will be in 2020 or 2030.

Actually, the dispute is just a result of different understandings on the conception of Lewis turning point. Therefore they got different time points that Lewis turning point comes. The consensus is that the labor market is in a transition. We believe that, in this labor market, labor shortage is one major character in some regions and industries in certain time. Further, the decline of population increase rate will deteriorate the issue. Another distinctive character is the rise of labor's wage level.

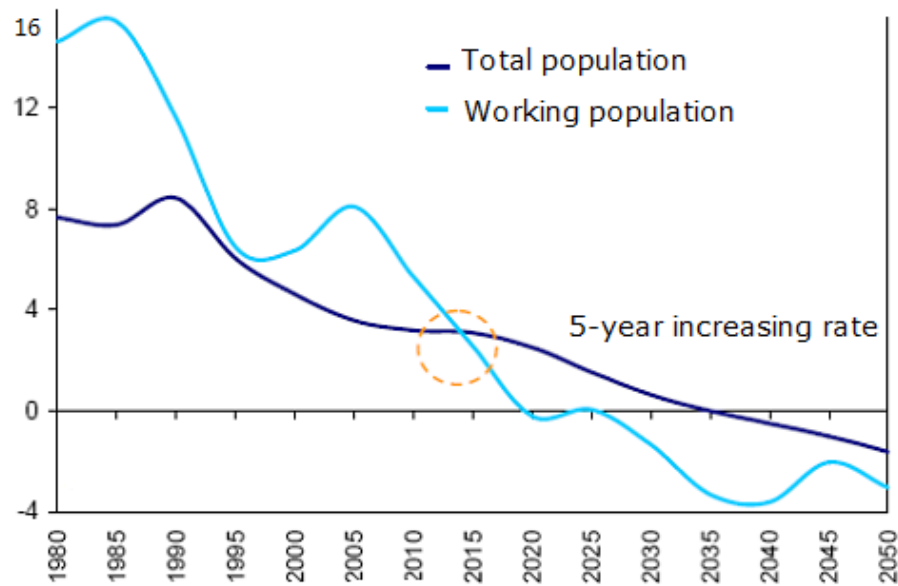
As shown below, the increasing rate of total population is declining, although the number of total population is still rising year by year. According to some studies, the population of China will stop increasing in about 2030. A research by Morgan Stanley indicates that the increasing rate of total population will reach zero in 2035, while the rate of working population will get to zero ten years earlier than that of total population.

Table2.1 Decline of population increase rate

Year	Total population (ten thousands)	5-year increase rate
1980	98,705	6.80%
1985	105,851	7.24%
1990	114,333	8.01%
1995	121,121	5.94%
2000	126,743	4.64%
2005	130,756	3.17%
2010	134,091	2.55%

Data source: China Statistics Year Book 2011

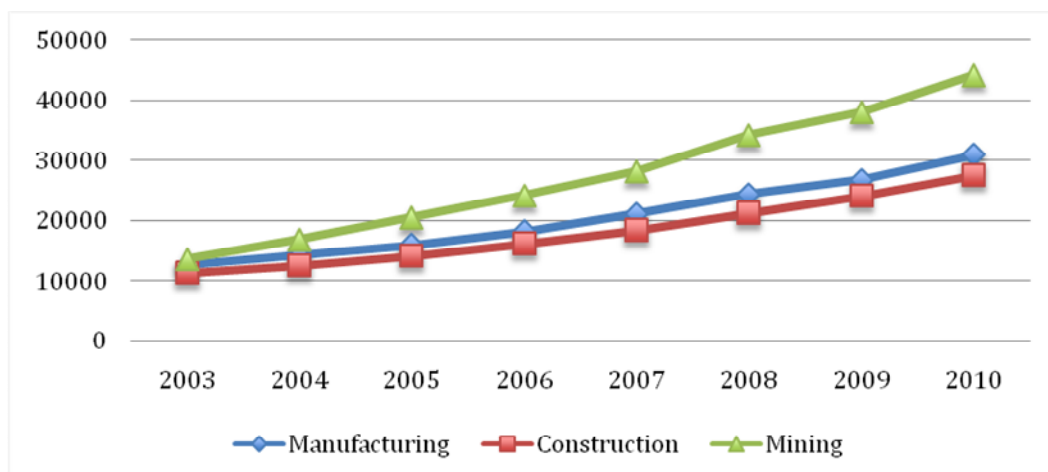
Figure2.1 Population change trend



Source: UN World Population Prospect, Morgan Stanley

As another important index of labor market, the wage level of workers also shows an up trend. We selected three industries, manufacturing, construction and mining, where rural migrant workers account for a bigger proportion. It should be noted that the increase of wage level is caused by many factors, while we focus on the result that labor cost is rising.

Figure2.2 Average nominal wage of employed persons in urban units by sectors (Yuan)



Data source: China Statistics Year Book 2011

The new trend of population will bring the ending of demographic dividend². It means that the previous extensive development model which relied on low-cost labors is not reliable any more. The economy needs to find a new development road. This is particularly obvious in manufacturing industry.

Although called “world factory”, China cannot be said to be strong in manufacturing. A large number of enterprises in manufacturing industry, especially small- and medium-sized enterprises (SMEs), are engaged in low value added production. The profit margin is very low and heavily relies on the cheap labor cost. Take iPhone for example. Although as the main assembling place, mainland of China can only get 1.8% of profit of one iPhone, Taiwan 0.5%, while Korea gets 4.7% through supplying some key components such as memory card and CPU by Samsung and LG. That is why when labor cost rises, many labor-intensive factories go bankrupt because the profit is squeezed, especially in low skills-required industry.

Sufficient low-cost labor supply discouraged SMEs to upgrade, while the lack of skilled workers limited their ability in innovation. One of the biggest gaps between Chinese companies and Japanese ones is the workers’ ability in skills update which is also called “現場力 Genba Ryoku” in Japanese companies. Workers without or with little skills cannot be expected to come up with good ideas during the manufacturing process. The low quality of workforce results in the low quality of products in manufacturing. In many SMEs, workers attend producing activities without any training. Even for key posts that has skills requirement, workers are trained very simply in a limited time before going to producing activities.

Now, the new change in labor market is forcing enterprises to upgrade and optimize to improve their competitiveness. During this process, it is indispensable to have a large number of

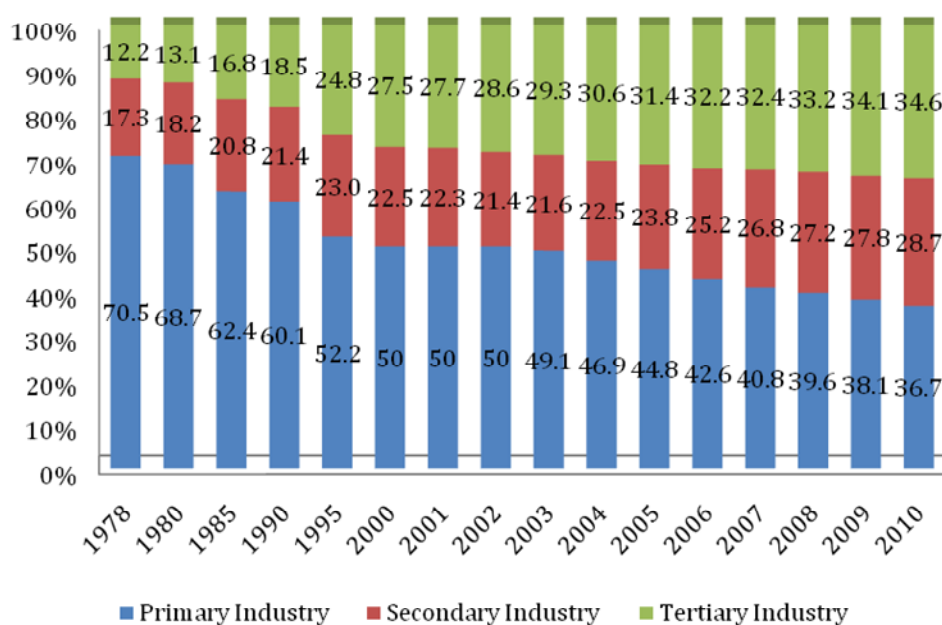
² Demographic dividend refers to the effect that economy grows because the rate of labor force in the total population rises. It happens when the fertility rate falls making a higher ratio of productive workers to child dependents in the population. Demographic dividend cannot last forever. When the large adult population turns older, the smaller child population will face a burden of taking care for the elderly. That is the aging society. It is discussed firstly by David E. Bloom and Jeffrey G. Williamson in 1998.

high-quality human resources, in which skilled workers, especially high-skilled workers play an irreplaceable role.

Section 2. LARGE NUMBER OF RURAL MIGRANT WORKERS

It is a fact that the total population's increase rate is controlled at a very low level, but that doesn't necessarily mean that the labor supply will turn into a shortage quickly. The reason comes from the employment structure among the three industries.

Figure2.3 Composition of employed persons by industry

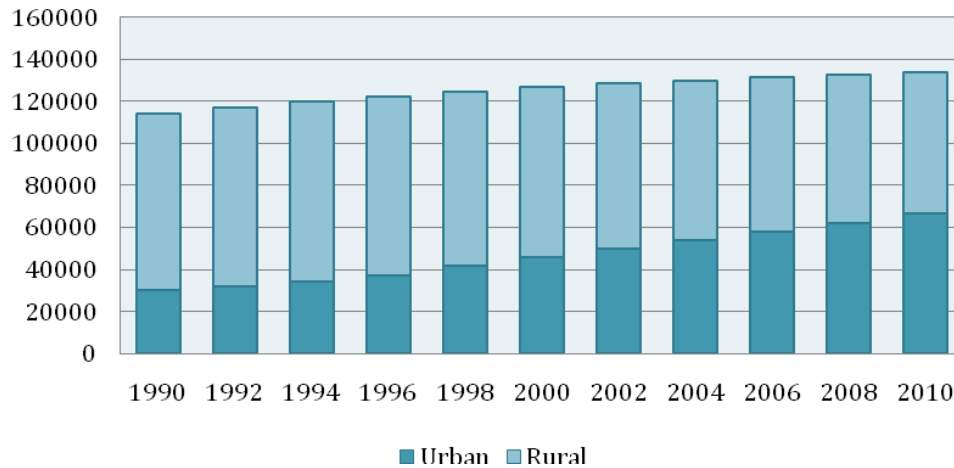


Data source: China Statistics Book 2011

From the graph, we can see that the employment rate in the primary industry is still very high. While the employment composition of tertiary industry, which absorbs the most employees in advanced countries, is only half of the composition in Japan. In advanced countries, usually the workforce in the primary industries accounts for less than 5% of the total workforce. For example, in England, the rate is 2%, in Japan it is about 6%. Further more, the labor productivity of primary industry is much lower than the other two industries in China. That means that with the improvement of the labor productivity of the primary industry, plenty of labors employed in this industry will be

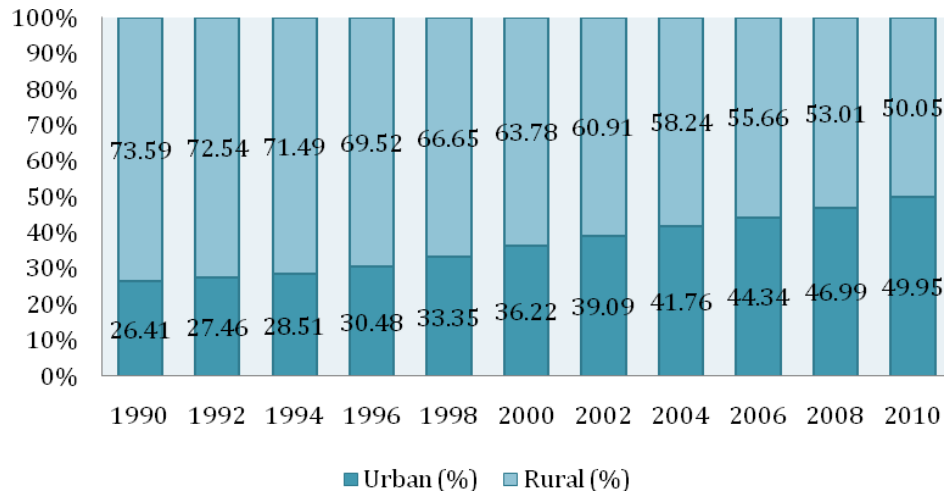
set free and transferred to other industries. That means that the labor supply will be sufficient in the near future.

Figure2.4 Composition of population (in ten thousands)



Data source: China Statistics Book 2011

Figure2.5 Composition of population in percentage



Data source: China Statistics Book 2011

In recent years, continuing labor transfer from rural areas to urban areas marked the labor market development and urbanization process. The population in urban areas keeps increasing. In 2011, the number of population in urban areas exceeded that in rural areas for the first time. In spite of this trend, there is still a large number of workforce in rural area. According to a research by

Morgan Stanley, 80-100 millions workforces in rural area can be transferred to urban area in the near several years. According to Dr. Cai Fang, the dean of Chinese Academy of Social Science Research Institute of Population and Labor Economy, the number of surplus rural labor is 58 millions. This means that rural transferred labor force will still compose the main body of labor supply.

Table2.2 The number of rural migrant workers (in millions)

	2008	2009	2010	2011
Total number	22,542	22,978	24,223	25,278
1.Work in other places than local places	14,041	14,553	15,335	15,863
2.Work in local enterprises	8,501	8,445	8,888	9,415

Source: National Bureau of Statistics of China

One character of these transferred labors is low labor quality. Most of them have no vocational skills or occupational certificates. According to a survey³ on rural migrant workers conducted by the National Bureau of Statistics of China, only 10.5% of the workers have attended training on agricultural technology, 26.2% have attended non-agricultural vocational skills training, while those who have neither agricultural no non-agricultural training experiences account for 68.8%. It also shows that the proportion of those who have received non-agricultural vocational training is higher for young workers (under 30 years old) than that for older workers. The proportion of those who have received agricultural technology training is in a contrast situation. The lower the age level, the lower is the proportion of getting agricultural training, which reflects that young workers are losing their interest in farming. Compared to their fathers' generation, young workers are more likely to attend non-agricultural vocational training.

Table2.3 The situation of rural migrant workers' training experiences

Training experiences	Percent (%)
Agricultural technology training	10.5%
Non-agricultural vocational training	26.2%
Neither	68.8%

³ The original Chinese name of the survey is 2011 年我国农民工调查监测报告

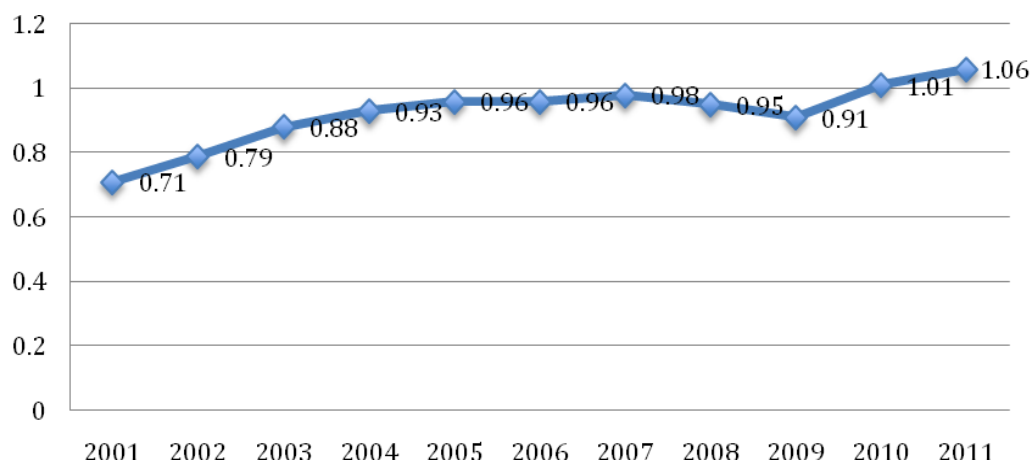
Source: National Bureau of Statistics of China

On one hand, there are still a large number of labors in the primary industry who will be transferred to the second and tertiary industry. They will be the main body of labor supply for a rather long time to come. On the other hand, few of them have received any training before and after employment. The low labor quality is not sufficient for economy development. It also limits further chances for more stable and higher-paid employment. In order to improve the labor quality, vocational training is extremely important.

Section 3. STUCTURAL SHORTAGE OF SKILLED WORKERS

According to the annual research and statistics by China Human Resources Marketing Information Survey Center, both of the numbers of vacancies and applicants in the market have a rising tendency since 2001. The number of vacancies increases faster than that of the applicants. Especially since 2004, the rate of vacancies and applicants⁴ is keeping above 0.9. Although the rate dropped a little during 2008-2009 due to the financial crisis, it rose back to 1.01 in 2010.

Figure2.6 The rate of vacancies and applicants in 2001-2011

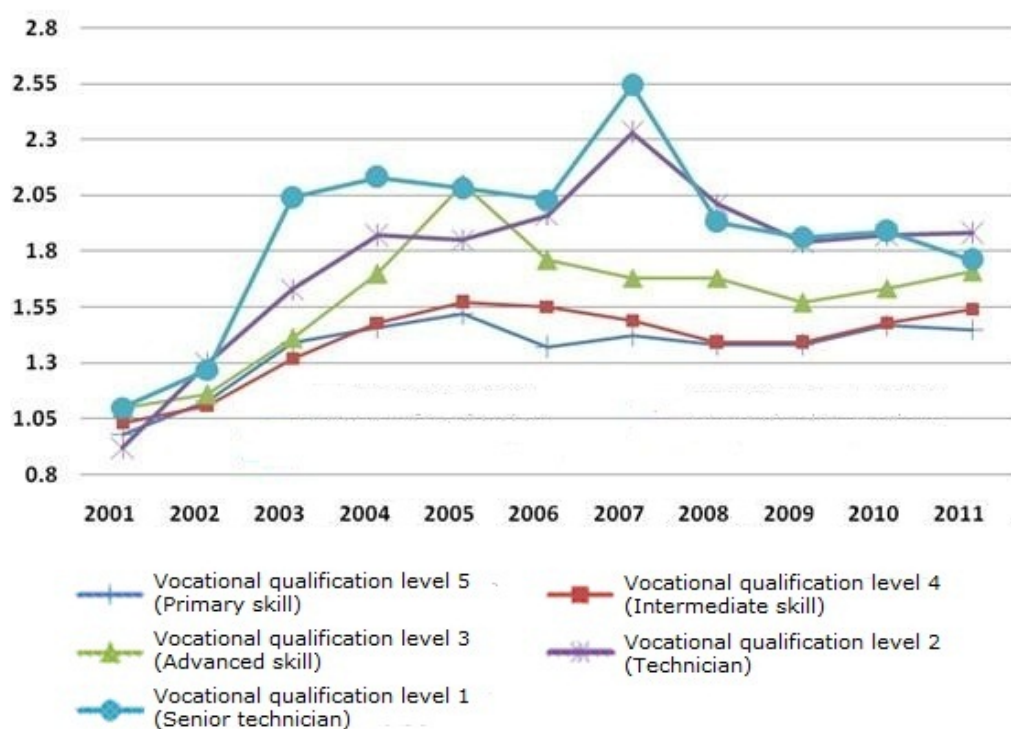


Source: www.mohrss.gov.cn

⁴ Rate of vacancies and applicants = number of vacancies/number of applicants. E.g. 0.8 means that 10 job hunters compete for 8 vacancies. When the rate is bigger than 1, it means there are more vacancies than applicants.

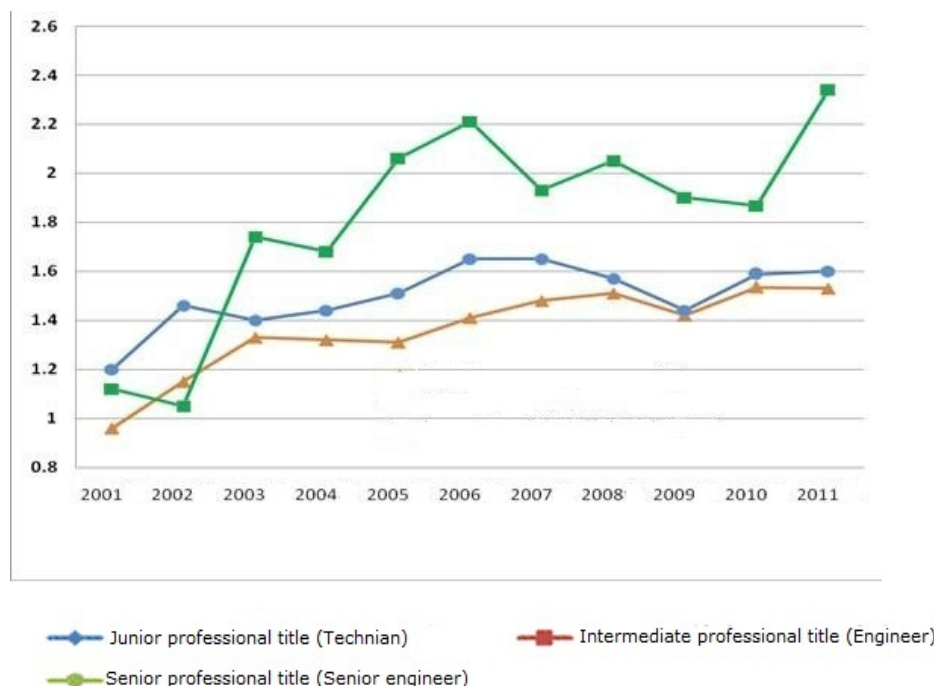
One of the important characteristics of the “rural migrant labor shortage” is the shortage of skilled workers. The supply and demand gap of high-level skilled workers is much bigger. According to the survey, 49.3% of the vacancies have clear technical requirements. From the figures below, vacancies of all skill levels are more than applicants. The vacancies-applicants rates of Senior engineer, Senior technician and Technician are relatively high, which are 1.87, 1.89 and 1.87 respectively. That means that these three kinds of workers are in a big shortage on the labor market. The demand for these three kinds of employees shows an uptrend during 2001-2007. From 2007, it turns to a downtrend but still keeps at a high level.

Figure2.7 The rate of vacancies and applicants by skill levels



Source: www.mohrss.gov.cn

Figure 2.8 The rate of vacancies and applicants by professional titles



Source: www.mohrss.gov.cn

Until 2009, there are about 26.31 million workers with high-level skills, which accounts for 24.7% of all skilled workers. In advanced countries, this rate is 30%-40%. According to the Ministry of Human Resources and Social Security, the demand for skilled workers in 2020 will increase by 32.9 million (excluding the existing gap of 9.3 million) and by 9.9 million (excluding the existing gap of 4.4 million) for high-level skilled workers than 2009.

Table 2.4 Skilled workers demand increase forecast in 2015 and 2020 (in person)

Skilled workers by levels	Demand in 2009	Demand increase during 2009-2015 in a weighted approach	Demand increase during 2009-2020 in a weighted approach
Total	115,773,408	18,881,288	32,909,662
Senior technician	1,141,688	214,314	401,897

Technician	5,292,948	963,859	1,781,466
Advanced-level skilled workers	24,236,005	4,269,010	7,759,835
Intermediate-level skilled workers	43,368,086	7,364,523	13,130,332
Primary-level skilled workers	41,734,680	6,069,583	9,836,133

Source: Medium- and Long-term Strategy for High-level Skilled Workers Development (2010-2020)

According to this forecast, we calculate the gap between skilled workers supply and demand during 2009- 2020.

Table2.5 Demand gap during 2009-2020 (in thousands)

Skilled workers	Number in 2009 ⁵	Demand in 2009	Existing gap in 2009	Demand increased (2009-2020)	Promoted to next level	Total gap (2009-2020)
Senior technician	866	1,142	276	402	--	678
Technician	4,356	5,293	937	1,781	678	3,396
Advanced-level skilled workers	20,983	24,236	3,253	7,760	3,396	14,409
Intermediate-level skilled workers	42,833	43,368	535	13,130	14,409	28,074
Primary-level skilled workers	37,370	41,735	4,365	9,836	28,074	42,275
Total	106,408	115,773	9,365	32,909		88,332

⁵ The number is estimated based on numbers published by the Ministry of Human Resources and Social security and numbers in Labor Statistics Yearbook.

In surveys by the Ministry of Labor and Social Security (the predecessor of the Ministry of Human Resources and Social Security) and local departments as well as some organizations⁶, it is found that senior technicians and technician are facing the aging problem. In general, 50% senior technicians and 40% technicians will retire in 10 years. We use these retirement rate to adjust the demand gap and calculate the training capability gap at current average capability.

Table 2.6 Training capability gap during 2009-2020 (in thousands)

Skilled workers	Number in 2009	Estimated retirement in 10 years	Adjusted total gap (2009-2020) (1)	Average training capability⁷ (2006-2009) (2)	Capability gap (1)-(2)*10
Senior technician	866	@50%	1,111	56	551
Technician	4,356	@40%	5,139	297	2,169
Advanced-level skilled workers	20,983		14,409	1,498	
Intermediate-level skilled workers	42,833		28,074	4,734	
Primary-level skilled workers	37,370		42,275	4,139	885
Total	106,408		88,832	10,724	

Based on the average capability during 2006-2009, the demand for primary-level, intermediate-level and high-level skilled workers can be met by the current vocational training capability. What should be strengthened is the capability for bringing up senior technicians and technicians, there will be 2,040 thousand gap during 2009-2020.

⁶ The surveys were done in Beijing, Zhejiang, machinery industry, construction industry and so on.

⁷ It is calculated based on the data in Labor Statistics Yearbook 2007-2010.

Section 4. CHAPTER SUMMARY

In this chapter, we analyzed the characteristics of the current labor market in China and pointed out that a large number of high-quality skilled workers are in extremely high demand. Specifically, the characteristics are:

1) With the population increase slowing, the labor supply will decrease finally. Correspondingly, the labor cost will continue rising. This situation is forcing labor-intensive enterprises, especially SMEs, to change the growth way that previously relied on low-cost labors and find a new model that relies on technology and skills innovation. They should pay more attention on producing high value-added products and improving the product quality. During this process, high-quality skilled workers are indispensable and essential.

2) On the other hand, there are still plenty of labors who will be transferred from the primary industry and shape the main body of labor supply. But the labor quality of these workers is not high with little skills training. They need appropriate training to improve their employability and productivity.

3) Skilled workers are in a serious shortage on the labor market, especially high-level skilled workers. According to the labor market forecast, the demand gap will keep growing for some time to come. In order to fill the gap and meet the demand, a large number of skilled workers should be brought up.

CHAPTER 3. ANALYSIS ON VOCATIONAL TRAINING

It is widely believed that vocational training is an important policy instrument in the knowledge- and techniques-intensive society. Through developing appropriate skills and improving labor supply, vocational training can enhance employment. For a country, vocational training is essential to improve competitiveness and keep sustainable development. For work force individuals, vocational training will improve their “employability” and thereby leads to a better life. In this chapter, we will analyze the benefits of vocational training in general and other countries to gain implications for China.

Section 1. THE BENEFITS OF VOCATIONAL TRAINING

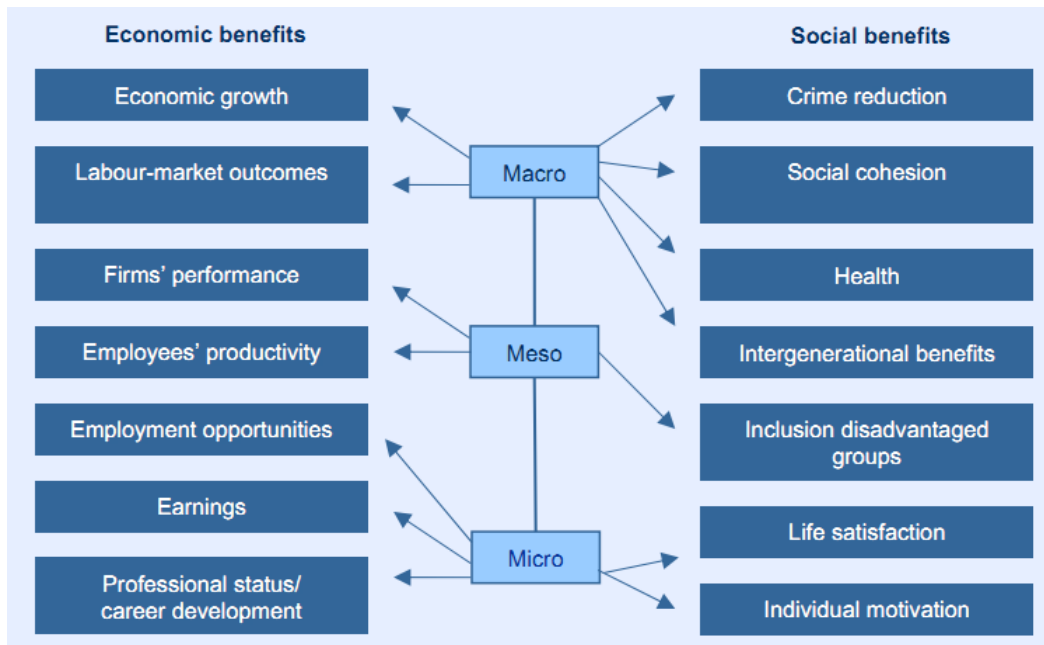
For a long time, vocational training did not get enough attention, especially in developing countries. When saying “knowledge changes fate”, people firstly think about academic education. Sometimes entering a university is even thought as the only way to get a job and lead a better life. The preference for intellectual activities over manual work, white collar over blue-collar jobs has caused blindness in increasing and expanding universities.

Fortunately, this situation has been changing. Vocational training is putting more and more weight on. People have realized that vocational training is another efficient vehicle for economic development and social improvement. When education is considered the key to effective development strategies, people believe that vocational and technical education is the master key that can alleviate poverty, conserve the environment improve the quality of life and help achieve sustainable development. (Lourdes R. Quisumbing 2005)

How can vocational training bring the above-mentioned effects? European Center for the Development of Vocational Training (CEDEFOP) has summarized 14 benefits of vocational training that are grouped into economic benefits and social benefits⁸.

⁸ Most of the sources in this section are from CEDEFOP’s research result in “The benefits of vocational education and training (2011)” unless the source is written.

Figure3.1 Types of vocational training benefits



Source: CEDEFOP

This thesis will focus on four benefits of vocational training and to see how vocational training can fit the current situation of the labor market in China.

3.1.1. Improve total labor market outcomes

Labor market outcomes are the shorthand for worker (never employer) variables that are often considered endogenous in a labor market regression. The determinations of labor market outcomes include employment, hours worked, unemployment, worker flows, and wages. Studies show that the impacts of vocational training on labor market outcomes often reflect direct or indirect aggregate individual productivity effects.

CEDEFOP carried out a research from 2005 to 2009 in 21 European countries. The research gathering and analyzing evidence on VET (vocational education and training) benefits across Europe, found that positive relationship between vocational training and labor market existed needs in most of included countries. Vocational training brings a growth of total employment, i.e. a higher participation on the labor market. Workers with some vocational training are easier to find a job than

those without any vocational training. Recent trends show that in some places, workers who have attended vocational training have more chances to get job offers than those who have pure academic education but do not have any vocational qualification.

According to CEDEFOP, around half of all jobs in the world in 2020 will require a medium-level qualification, which will often be achieved by some form of vocational training. A 2010 report from Georgetown University's Center on Education and the Workforce found that about 63 percent of all job openings in America between 2008 and 2018—nearly 30 million jobs overall—will require at least some form of postsecondary education and training, and the U.S. Bureau of Labor Statistics estimates that nineteen of the thirty fastest-growing occupations during that same time span will require at least a postsecondary vocational award.

Vocational training can also function as an active policy to lower the unemployment, especially during economic recession. In Spain, the worldwide economic crisis caused unemployment to increase to 17.4% in 2009, with unskilled laborers most affected, while new abilities acquired through vocational training can be an insurance against unemployment.

Another important outcome is the improvement of individual financial status and advance in a professional hierarchy. In Portugal, a worker with an upper secondary education certificate usually earns around 60% more than an employee without one. The Studies in the Netherlands held by CEDEFOP show the similar result that trained staffs earn more, with wage differences ranging from 3.3% to 15.7%.

In China, as mentioned in chapter 2, a large part of work force body is migrated labors from rural areas. They are from age sixteen to sixty. Some of them give up farming and go to cities to work in the thirties or forties. Some of them are just school leavers after secondary education without any working experience. In both situations, little of the workers have attended vocational training. Most of young people stop their education because of financial problems. They would like to start working to support their family and themselves rather than spend huge money on education which cannot guarantee a good job. However, these migrated workers have little advantage in labor market except for low cost. They mostly go to such industries as apparel making, construction,

mining, and so on. The employment is usually unstable without any insurance of contract and the salary is very low. The unskilled workers compete with each other because the labor supply is over the market demand. Furthermore, physical strength is a determined factor for these jobs. Once they become older or weaker, they cannot continue working, while the experience is of little help to their future job. For these people, vocational training means much more chances and much better paid salary. When they earn more money, they will be able to afford acquiring more skills and abilities. Some skills will be worth more with age, thus they will be able to be employed when getting older, no need to go back to rural areas.

As mentioned in Chapter 3, as population growth slows and become minus at last, China cannot get advantage of the demographic dividend any more in the future. Sustainable economic development will depend on the improvement of individual productivity, but not on low labor cost. Improving individual productivity is one of the outcomes of vocational training. Studies show that industrialized countries invest more in vocational training than developing countries. The UNESCO Institute of Statistics (UIS) finds a simple correlation between the economy growth and vocational training, as “the greater a country’s Gross Domestic Product per capita, the greater its secondary Percentage of Technical/Vocational Enrolment” (UIS, 2006, p.54).

3.1.2. Optimize the labor supply structure

Here we use labor supply structure mainly in terms of skill levels held by labor force in labor market. Skill levels include advanced level, intermediate level and junior level. For sustainable development and technological innovation, an economy should maintain a proper structure of labor force with three skill levels.

Different from the past, today more and more jobs need the workers to have some certain skill level. According to Harry Holzer and Robert Lerman in their report “America’s forgotten middle-skilled jobs” in 2007, that many jobs emerging in critical sectors in U.S. such as health care, clean energy, and advanced manufacturing are middle-skill jobs; that is, jobs that require significant education and training beyond the high school level, but not a four-year college degree. Besides,

these occupations make up about half of all jobs in today's labor market, and will continue to be the single largest segment of the labor market well into the future.

Many countries are facing the problem that the labor supply structure cannot meet the labor market demand. How to optimize the labor supply structure? Vocational training may be a most effective way.

For the first thing, with the increase of total number of skilled workers, the whole workforce's quality will be improved. Unlike academic education, which acquires certain knowledge level and takes a long time to get a degree, vocational training is accessible to most of the workers. In particular, those early school leavers and aged workers without any skills will benefit from vocational training.

Secondly, component of skilled workers can be balanced. Vocational training provides with different levels and types of training that can satisfy different worker groups. A worker can get training before being employed to obtain some basic skills thus can find a job. During the employment, he or she can attend on-the-job training or upgrade training for gaining new skills or advanced skills. Government can also put designated support or subsidies on training specific worker groups, for example, high-level skilled workers who are extremely critical for enhancing the business competitiveness and technological innovation.

Thirdly, vocational training is more flexible in changing training content based on labor market needs. One of shortcomings of academic education is the irrelevance between many subjects and market demands and the inflexibility in changing course content based on market change. While the training course of vocational training are set up according to market research from the beginning. It is catered for the market needs. Besides that, vocational training applies short-term programs that are usually not more than 2 years, it is much easier and lower-cost to change training content when it is not fit the market demand.

3.1.3. Improve enterprises' performance

The benefits of vocational training to enterprises can be viewed from both micro and macro perspective. In micro perspective, a company can improve performance by increasing employee

productivity and saving cost of recruiting external skilled workers and cost when skilled workers are in short supply. In macro perspective, a certain number of skilled workers prepared by vocational training are one of indispensable conditions for industry structure optimization and enterprise transformation and upgrading.

It has been improved that there is a positive relationship between vocational training and company productivity. In Italy, companies that have not invested in training reported lower productivity and profitability than those that had. The research result also indicates that training courses have more positive effects on productivity than on wages, which means that companies gain more from training than their employees. In Austria, companies doubling their investment in training increased their productivity by 4% and pay higher wages. The other way that company benefits from vocational training is that company can save human resource cost. When facing shortage of skilled workers, a company may choose to recruit employees from outside. Then it has to bear the cost of recruiting and training the new employees and the performance difference between internal and external employees.

In China, many enterprises that do business depending on low-cost labor force have no motivation on transformation and upgrading. When labor force cost goes up, these companies suffer a lot to maintain profit margin. Quite a big proportion of companies go bankrupt with the economy recession and increase of labor force cost. If enterprises keep content in low value-added economy activities, China will still be at the end of world industry chain. But if the whole skill level of labor force is improved, with the increase of wage level, enterprises will be forced to reform and upgrade. They will be engaged more in doing high value-added business. Without skilled workers, enterprises cannot take full advantage of emerging business opportunities.

3.1.4. Social integration

Social benefits of vocational training are obvious but not easy to analyze quantitatively. Researches usually investigate its effects on social stability, crime reduction, health status, relationships between generations, social cohesion, and social integration. Social integration is seen as the main return of labor market participation.

Social integration is the movement of disadvantaged groups of a society into its mainstream. In China, it has particular meaning for the migrant workers. Migrant workers refer to people from impoverished regions, mostly rural areas, who go to urban and prosperous coastal regions in search of work. These migrant workers are and will be an important body of labor force supply in labor market. Although they have made an enormous contribution to the economic development of cities, they are not treated as equally as urban citizens. They are confronted with economic and social disadvantages.

There are several reasons for this situation. The first one, which is also a root one, is the urban and rural dual society structure⁹ in China. Due to this system, urban citizens have a natural superiority complex to rural residents. Secondly, migrant workers are mostly engaged in such job categories as construction workers, sanitation workers, security guards, or domestic service staff, which either have dirty working environment or require simple physical labor. Thirdly, as happened in many other countries, people tend to look down upon blue-collar jobs relative to white-collar jobs. Migrant workers mostly work as blue-collar workers, or even worse, they just provide physical strength.

Migrant workers themselves also have a feeling of insecurity in career and life. Besides low salary, many of them cannot get job contracts with employers, which often caused employers' malicious nonpayment. Without skills, migrant workers have difficulty working for a long time, and have no chances of promotion. Many of them have to go back to hometown when getting old, because there are few jobs that fit them. With contrast to a skilled worker, whose value may increase with time, the choices of a non-skilled worker will decrease with age.

For this situation, vocational training can provide at least two benefits. First or all, it helps to create an atmosphere of respecting skills and skilled workers, which will encourage more and more people to choose blue-collar jobs. There was a time in 1950s and 1960s when skilled workers were

⁹ The core of the dual society structure is the household registration system that started from 1958. The system divides people into agricultural and non-agricultural permanent residences. The registration cannot be changed easily. Under the registration, rural residents cannot enjoy the same social welfare including education and social security as urban residents. It is in recent years that social security started to cover agricultural residences but at a very low level. The structure in fact created two social identities and social inequality.

respected highly. An 8-level skilled worker was viewed as important as a professor. At that time, excellent skilled workers were brought up in many industries. Enterprises benefited from their technological innovation. Secondly, when rural migrant workers can access vocational training, they will have much more chance to have the same jobs as urban citizens. Besides economical improvement, they will also become more confident and comfortable in urban life. All of this will do favor to the healthy development of society.

Section 2. EXPERIENCE IN UK, FRANCE, GERMANY AND JAPAN

Europe has established traditional vocational training since industrialization period. Different countries developed different models of vocational training. UK, France and Germany are dominant in European economy since World War II. These three nations show great differences in the role of states in operating vocational training and the structure, financing and management approaches of enterprises. Researchers think that UK as a more liberal market economy employs a market-led approach, state intervention system is the main feature of French approach, and Germany is typical in dual-system model. On the other hand, Japan is distinctive for its successful within-enterprises vocational training.

3.2.1. UK

United Kingdom had a long tradition that thought highly of liberal science but neglected skills. The objective of education was to bring up gentlemen. Vocational training was seen as the only one choice of lower classes for occupation. This trend of thought had hindered the development of vocational training in UK.

After the World War II, the poor economic performance made the government become concerned with British workers' low levels of skills. Vocational training was put more and more attention. In 1964, Industrial Training Law was put in practice. According to the law, the government played the role of intervening in vocational training. Since then, British government stepped up efforts on guiding vocational training, such as the establishment of Manpower Service Commission and a variety of training programs.

The change happened in the Thatcher Government when market liberalism was popular. The government returned the responsibility of training to enterprise and attempted to establish a more industry-led and market-based approach. Before that, Training boards could set training levies for enterprises within their sectors. But now, this capacity was abolished. The government put more attention on the improvement on the quality of training. Vocational qualification system was established. UK is distinctive in its mixed model that includes A-levels (academic qualification), GNVQs (General National Vocational Qualifications, general vocational) and NVQs (National Vocational Qualifications, vocational training which is industry oriented). Students holding A-levels of the GNVQs can enter university, which stimulated the increase of students entering university with the GNVQs. All universities except Oxford and Cambridge and one other accept these qualifications. The establishment of GNVQs and NVQs improved the status of vocational training.

However, the industry-led approach was questioned due to the low willingness of British enterprises to invest in training and the training expenditure. Researchers argue that the financial structure of British industries requires short-term profits and prefer low technology production. Another reason was skill poaching, which makes enterprise reluctant in investing human capital. Comparative studies in the 1980s and 1990s by the National Institute for Economic and Social Research indicated that the levels of skills formation in various industry areas in the United Kingdom were consistently below those of other advanced economies.

During the Blair Government, free market approach was questioned. A more unified approach was introduced. Two recent initiatives, Small Firm Training Loans and Work Based Learning for Adults reflected a greater state intervention in vocational training. In the Government's White Paper 'Learning to Succeed', the government would develop a 'new framework for post-16 learning', which included a Learning and Skills Council 'responsible for the strategic development, planning, funding, management and quality assurance of post-16 education and training'.

Facing a long recession and weakness in technological transformation, each government has tried to foster a training culture and training market. But still, there are few strong measures to encourage enterprise-based training and skills upgrading.

3.2.2. France

People in France are entitled to life-long education. Life-long learning makes it possible for all individuals to benefit from training. The modern vocational training in France was launched at the beginning of 1970s. Now, all of 22 regions have set up vocational training centers. State intervention in vocational training is a distinctive character. The main ways of state intervention are legislation and collective bargaining. Continuing vocational training is an important economic activity, accounting for 1.7% of French gross domestic product.

There are several laws on vocational training. The law in 1971 is called “Vocational Continual Training Code”, which set the financial resources of vocational training and entitled workers the right of vocational training. The law in 1993 drew up a Five-Year Law to encourage young people to attend vocational training and improve apprenticeship that traditionally had a low status in France. In order to implement the plan, the Five-Year Law laid out a decentralization of training programs. Regional governments were empowered more on skills training. While the central government votes the laws, it is the regional governments, since 2003, that are responsible for implementing vocational training. They have general responsibilities and are free to develop their own training policy for youth and adults.

The finance of vocational training comes mainly from government and enterprises. The responsibilities of the State and the regions with regard to financing are set out by law. For example, 111 billion (1.7% of GDP) francs were invested in vocational training in 1991, of which 45% was from local central government, 4.9% local government and 41.5% from enterprises. Vocational laws have imposed the obligation to finance and organize training on enterprises. For firms with 10 or more employees, the legal obligation is 1.5% of the firm’s gross annual payroll, compared with 1.2% in Germany. In fact, some companies pay far more than this legal minimum. The average contribution is approximately 3%. For firms with less than 10 employees, the legal obligation is 0.25% of the company’s gross annual payroll¹⁰. The fund collection bodies are created by employer and employee organizations. The central government maintains the right to examine and inspect

¹⁰ http://www.centre-inffo.fr/international/spip.php?article37#outil_sommaire_8

these bodies in order to make sure that training plans, individual training leave benefit and alternating work-study training contracts are financed in all firms.

There are three kinds of vocational training according to the trainees groups. The first one is for youths under 26. This training is operated through apprenticeship training and contract training. There are no essential differences between two ways except the finance and requirement for the trainees. Apprenticeship training is financed by the regional authorities or by the state through the apprenticeship tax that was established in 1925. It is therefore free for the employer and for the apprentice. Apprentices are required to obtain a qualification or diploma. Contract training is financed by Youth Training Fund. It doesn't have strict requirements for trainees. During the 1980s, measures have been worked out aimed at solving France's weaker industrial competitiveness and higher level of youth unemployment in comparison to those of Germany, which were partially attributed to the success of the dual system. These measures included: (1) the opportunity to take all vocational diplomas through apprenticeships; (2) opening of apprenticeships to the private, non-profit sector; (3) the provision of financial incentives for enterprises and the organization of promotional campaigns; (4) setting an objective of a minimum educational qualification for every young person and allowing vocational institutions to open classes or training units for apprentices.

The second kind of vocational training is for employees. According to the laws, each French worker has chances to get vocational training. Every five years, employers and employees would have negotiations that include negotiations over the plan and implementation of training. Enterprises are required to have training plans, and training activities included within these plans are considered to be part of paid work. Besides that, employees are entitled to conge personal training leave. Generally, if the employees who ask for training leave do not exceed 2% of all employees, the employer cannot refuse the application for leave.

The third kind of training is for unemployed people. France has been suffering for a long time from high unemployment. Vocational training is one of measures to fight with unemployment. The government invested about 4 billion Francs every year in this training. Training institutions are required to sign re-employment contract with government to evaluate training effect.

3.2.3. Germany

Germany has a long history of respecting skills and valuing vocational training. German business leaders agree that vocational training, the investment for the future, is an essential factor of improving economic competitiveness. Vocational training is so popular that “every person should receive vocational training” has become a common view. German economy is characterized by high skills, high levels of value added and high wages. Now, Germany is still the strongest engine of European economy. The traditional advantages in industry makes Germany suffer less than its European counter partners during financial crisis.

Vocational training in Germany is distinctive in its Dual System that has been a great success since its establishment. A large part of German industrial competitiveness and lower unemployment is attributed to Dual System. Dual System means that young people can acquire vocational skills and industrial experience, and at the same time improve their theoretical knowledge. Usually, a young person who want to enter Dual System firstly find an apprenticeship post in any industry he/she chooses, then he/she should find a vocational school to accept him/her for part-time learning. Approximately 350 training occupations are included in Dual System. The access to the system is not high, which formally only require trainees to finish lower secondary schooling. The period of training is generally three to three and a half years. It may be shortened for young people with upper secondary leaving certificates and for high performance trainees. The trainees receive training pay averaging about a third of the wages of skilled workers.

Large enterprises have their own training center, but SMEs cannot afford the high cost of training center. In this situation, inter-enterprises training institutions were established. These institutions having their own specialized training programs cooperating with vocational schools, enterprises, and guilds and provide training for enterprises, especially for SMEs. Besides that, there are also various institutions that provide off-the-job training, specialist training (e.g. nursing), post-apprenticeship training and so on. Those who cannot find an apprenticeship can get training in these institutions.

One of important factors of the success of Dual System is that there are adequate and excellent enterprises trainers. They are indispensable for Dual System. Germany training laws have clear and strict requirements to trainers, from trainers' abilities and knowledge to the training process and examination system.

Vocational training laws attribute to build a high status of training. Germany issued two laws on vocational training, namely the Vocational Education Law in 1969, which is the basic law, and the Vocational Education Promotion Law in 1981, which is a supporting law. These two laws regulated the pattern of the Dual System and promoted the advancement of the system. The Vocational Education Law is the basic and original law of vocational education, rather than one of branches of the Education Law. In 2005, the two laws were combined into one new Vocational Education Law, reflecting the adjustment in line with the new context.

The new revision of the vocational education law reaffirms the legal status and basic framework of vocational training. It also tries to meet the demand of both the society and young people in a proactive attitude to the challenge of new economic environment. By and large, the new characteristics of the revision are as follows: (1) Diversification. Other types of vocational training and full-time vocational education beyond the Dual System, which were excluded in the old law, are applicable to the new law. The time of these trainings can be transferred into the education time in the Dual system. As a result, young people will have more choices to get vocational training. (2) Efficiency. Training periods can be shortened based on the application of trainees and providers. The management and consulting institution of vocational education are also simplified. (3) Internationalization. The new law admits the training obtained in other countries or regions than Germany, but the training time shouldn't be more than 1/4 of the total training time. Trainees can also ask for certificates in German, English and French.

Another distinctive characteristic of the law is that detailed content concerning vocational education research and vocational education research institution is referred in the law. The law decides tasks of vocational education research, namely research, planning, report, statistics and survey. About the Federal vocational education research institution, more clauses are used to

stipulate the location, task, organization, funding, and so on. It is uncommon that vocational education research is put such a high legal position. The revision confirms that the Federal vocational education research institution is a federal legal institution, the finance of which is covered totally by the federal budget. The legal status of vocational education research attributes to the fact that Germany is one of the only several countries that do well in vocational training research.

The completion rates for the Dual System in German are very high (typically 90% and over). More than half of trainees immediately remain in both the industry and the enterprise. Dual System relies on the willingness of employers to provide apprenticeship placement and the willingness of young people to complete. It is thought that the relatively low level of wages for apprentices and company loyalty attribute to employer willingness. High standards for workforce qualifications encourage employees to complete training and upgrade their skills.

3.2.4. Japan

Like Germany, Japan also gives high respect to technology and skills. High quality, lean production and rapid technological innovation contributed to Japanese remarkable economic performance in 1980s. Japanese enterprises competitiveness, especially for those large manufacturing companies, is favored by adequate labor force with high skill levels and high company loyalty who are mainly brought up by within-enterprises training.

Compared with Germany, where skilled workers are brought up through apprenticeship as an initial vocational training, Japan is distinctive in within-enterprise training after the trainees have been employed. This private training system is so strong and stable thanks to Japanese particular cultural tradition, lifetime employment and enterprises structure. Japan is a “high trust” society, where collective interest is valued prior to individual interest, and individual need for a sense of belonging contributes to company loyalty. Under lifetime employment, most employees never change their companies for all the life since they entered, although the case is changing recently. Without the worry of staff turnover and skill poaching, employers are willing to invest in human capital. It is also an incentive for employees to upgrade their skills in enterprises. Keiretsu, the particular Japanese enterprises structure provides another beneficial factor for within-enterprise

vocational training. In Keiretsu, the cross-shareholding and mutual support among companies increase the stability and reduce staff turnover. The system also makes it possible for skill transfer among companies within one Keiretsu. All these cultural and economical factors analyzed above are conducive to a long-term human capital investment and skill formation.

Within-enterprise vocational trainings include OJT (On Job Training), Off-JT (Off Job Training) and self-inspiration. OJT is seen as the main method for skilled workers training. OJT is a way that the supervisor instructs and trains the employees directly during job activity. Therefore, the supervisor's level and the communication between the trainer and the trainees have a significant influence on training effect. Employees also can obtain various experiences through post rotation, which is viewed as a necessary path to promotion. Off-JT, which used to be a supplement of OJT, now has been put more and more attention. Employers can get a systematic knowledge through off-job study. But the cost efficiency and job arrangement has put it under argument. Self-inspiration is supported through ways such as inductions of lectures, paid training leave, training subsidies, and so on.

The dominant within-enterprise vocational training and remarkable diffusion of upper secondary education make public vocational training less attractive. As vocational training is mainly conducted in companies, occupational division is not a big factor when employers choose new recruits. Education achievement, rather than subjects, determines graduates' results in labor market. However, this system relies on a full employment. With a long time recession, unemployment of youth is increasing. Enterprises are facing the pressure of laying off employees. Consequently, public vocational training has been brought to the front.

In terms of state role in vocational training, two experiences can be used for reference. One is the legislation in vocational training, and the other is its National Trade Skill Testing and Certification.

The establishment of Vocational Training Law in 1958, which is treated as a basic law for vocational training, remarked the start of the modern vocational training in Japan. After that, the law was adjusted several times and many new laws and regulations were enacted. In 1985, Human

Resources Development Promotion Law replaced the Vocational Training Law. Japan not only has a complete legal system, but also revises the laws with the change of socioeconomic environment. The basic concept of the law is to improve workers' vocational ability, to strengthen their adaptability necessary for vocations, and to help the unemployment realize reemployment in a situation with changes in industrial structures, advances in technology, and internationalization of economic activities. Since then, the concept of vocational training has been broadened to an overall human capital development with an emphasis on vocational training throughout lifelong career. According to the law, the government should formulate basic plans on the development of human capital. The law stipulates the responsibilities of employers in employees' vocational training. Employers should provide their employees with opportunities and necessary aid to receive vocational training. Enterprises also should formulate and implement human resources development plans for their employees.

Like other similar testing and certification system in many countries, National Trade Skill Testing and Certification also play an important role in transferring training result to labor market and improving the recognition of vocational training. Many companies require their employees to pass the test as a necessary condition for promotion, which has contributed to encourage skill upgrading.

Section 3. CHAPTER SUMMARY

In this chapter, we analyzed the benefits of vocational training and did a case study on vocational training experiences in UK, France, Germany and Japan.

1. We focus on four benefits of vocational training, which include:
 - Vocational training can improve the total labor outcome;
 - Vocational optimizes the labor structure in terms of total number of skilled workers and the components of skilled workers at different levels;
 - Vocational training can improve enterprises' performance through increasing employee productivity;

- Vocational training has a positive affect on social stability and social integration.

All of these benefits are also true for China. It means that vocational training is an appropriate way to solve the shortage of skilled workers as well as other problems on the current labor market in China.

2. Through the case study, what can be learned are:

- Social respect on skilled labor affects on the improvement of vocational training. While complete legislation plays an important role on promoting vocational training.
- There is not an absolute mode in organizing vocational training successfully. Each country should build its own way based on its socioeconomic situation and cultural tradition as well.
- Effective implementation of vocational training relies on the cooperation among the government, vocational schools and enterprises. Especially, enterprises play an essential part in improving vocational training.

CHAPTER 4. VOCATIONAL TRAINING IN CHINA

As the most populous country in the world, China has experienced a remarkable economic performance in recent 30 years. In 2010, China exceeded Japan in terms of nominal GDP and became the second biggest economy. It has been maintaining a high growth rate in economy with an average annual growth rate of 9.9% in real GDP from 1979 to 2011. The great achievement is favored by the reform and open policy since 1979, of which the core spirit is to let the market play a main role in attributing resources. More and more private enterprises and foreign-owned enterprises were emerging, which had a significant affect on employment pattern. In order to become more competitive, state-owned enterprises that once dominated the economy also conducted deep reform, with lots of employees laid off. On the other hand, amounts of surplus labor force transferred from the first industry flooded into urban areas. All of these factors have influenced the development of vocational training in China. In this chapter, we will overview the situation of vocational training in China and analyze the problems it is facing now.

Section 1. A BRIEF HISTORY

The development of vocational training in new China after its foundation in 1949 can be divided into five stages.

The first stage (1949-1952): Vocational training at this stage focused on providing job-transfer trainings for unemployed persons. The purpose was to help unemployment persons find new jobs.

The second stage (1953-1966): Vocational training at this stage built a basic development base and experienced great achievement. China started the 5-Year Plan in 1953. This stage covers its first two 5-year plans, when the economy was in rapid construction and development. The focus of vocational training at this stage was to train on-job skilled workers and reserves of skilled workers to fit the economic development. There were two major ways in training skilled workers, namely training in vocational schools and apprenticeship. Vocational schools were established in many cities and graduates were required to reach the intermediate level in operational skills. Apprenticeship was

the major way to train skilled workers with primary skill levels. Vocational training got a remarkable performance at this stage, especially during the first 5-Year Plan. The plan required to training about 920,000 skilled workers in 13 industries including heavy industry, fuel industry and so on. In fact, much more skilled workers than this number were trained, with vocation schools training 147,000 and apprenticeship in manufacture and transportation industry training 1.061 million skilled workers. If added skilled workers trained by apprenticeship in other industries and short-time training within enterprises, the number would be bigger.

This stage was also the time that skilled workers were highly respected. In 1950s, a wage-payment system with eight grades and a skill hierarchical system adapted with the wage-payment system were established by learning from former Soviet Union experiences. It was not uncommon that an eight-grade skilled worker's salary was higher than that of the manager of a factory.

The third stage (1966-1977): Vocational training at this stage suffered from stagnancy even retrogression due to the damage of the Great Cultural Revolution (1966-1976).

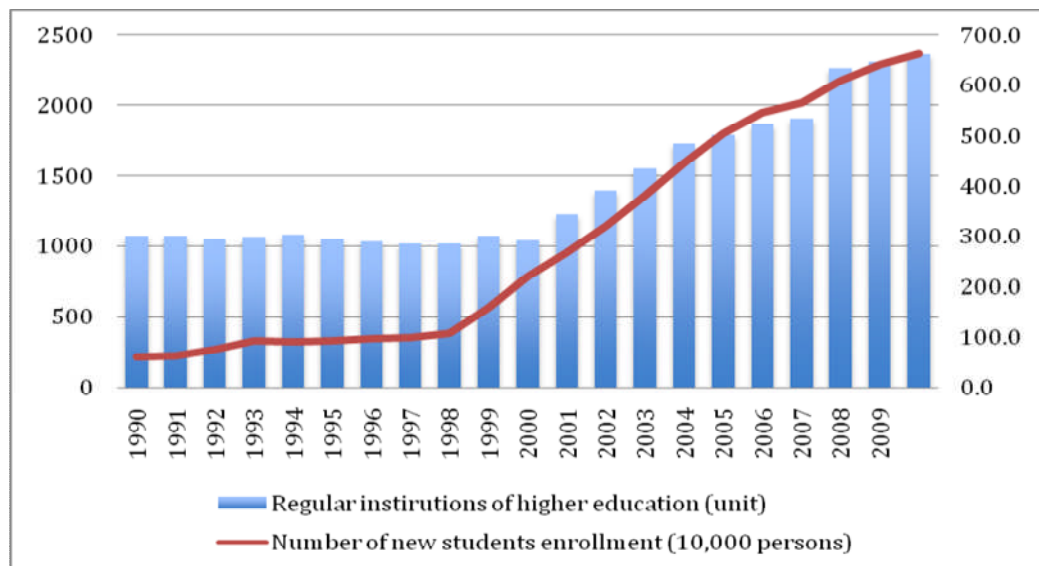
The fourth stage (1978-1998): This stage was a very important time for building the new vocational training system. In order to fit the economic development under the reform and open policy, vocational training was put more attention to as an important measure for promoting employment and boosting the economy. It was required to operate vocational training in large scales. For key technical posts, workers without passing skill examinations were not allowed to take the posts. During this time, Vocational schools were recovered rapidly. Employment raining centers run both by the government and private sectors emerged as a new vocational training force. Skill-grade examining and testing system was recovered and improved. But the apprenticeship was de-emphasized during this time although it still played a positive role in training skilled workers.

Since 1992, the market economy has been established gradually. Labor market played a fundamental role in allocating labor resources. Vocational training was required to fit the demand of the labor-oriented employment pattern. During this period, a relatively complete vocational training system was established. A new skill evaluation system was also set up to replace the former eight

grades system.

The fifth stage (since 1999): At the beginning of this stage, the development of vocational training slowed down. There were several reasons for that. During this time, state-owned enterprises were in deep reform, causing lots of workers to be laid off. In contrast, civil servants, teachers and other occupations that require higher education were highly sought after. At the same time, the diffusion of university enrollment¹¹ meant that young people had more opportunities to enter universities. If neglecting other channels which generally accounts for a very small part, the percentage of students in senior secondary schools who can enter universities reached 15.21% in 1999 and 20.15% in 2004. Almost all the parents expected their only one child to go to university. Vocational training was the last choice for those who failed further education. Therefore, participation of vocational training was not high. Skilled workers did not receive the same reputation and respect as before.

Figure4.1 The number of regular institutions of higher education and number of new student enrollment



Data source: China Statistics Yearbook 2011

¹¹ University enrollment diffusion started in 1999. The enrollment increased by 0.513 million at an increase rate of 47.4%. The increase rate kept at a high level in the following 5 years. In 2008, the diffusion policy was reviewed and thought too rapid.

Table4.1 New students enrollment in regular institutions of higher education as percentage of students in senior secondary schools

Year	Number of new students enrollment in regular institutions of higher education (10,000 persons) (A)	Number of students in senior secondary schools (10,000 persons) (B)	Percentage (A/B)
1990	60.9	717.3	8.49%
1991	62.0	722.9	8.58%
1992	75.4	704.9	10.70%
1993	92.4	656.9	14.07%
1994	90.0	664.9	13.54%
1995	92.6	713.2	12.98%
1996	96.6	769.3	12.56%
1997	100.0	850.1	11.76%
1998	108.4	938.0	11.56%
1999	159.7	1049.7	15.21%
2000	220.6	1201.3	18.36%
2001	268.3	1405.0	19.10%
2002	320.5	1683.8	19.03%
2003	382.2	1964.8	19.45%
2004	447.3	2220.4	20.15%
2005	504.5	2409.1	20.94%
2006	546.1	2514.5	21.72%
2007	565.9	2522.4	22.44%
2008	607.7	2476.3	24.54%
2009	639.5	2434.3	26.27%
2010	661.8	2427.3	27.26%

Data source: China Statistics Yearbook 2011

In order to enhance vocational training, the former Ministry of Labor and Social Security then formulated the National Plan on Strengthening Vocational Training to Improve Employability¹² in 2002.

In 2004, the “migrant workers shortage” and “skilled workers shortage” emerged firstly and forced people to rethink the labor force supply and demand. Vocational training for skilled workers was put high attention to from the state level.

Section 2. EXISTING STRATEGIES AND LEGISLATIONS

With realizing the imbalance of labor market and the increasing importance of skilled workers, vocational training receives more attention in policy making at the state level. The task of

¹² The original Chinese name is 加强职业培训提高就业能力计划

developing high-level skilled workers is written into a national medium- and long- term strategy of talents development, according to which a special plan was put into practice. For promoting vocational training itself, there is a general implementation advice published by the Ministry of Human Resources and Social Security as guidance for local efforts.

1. Strategy on high-level skilled workers development

Under the strategy of reinvigorating China through talents that was established firstly in 2002 after China's joining WTO, the country has been strengthening the development of talents. In 2010, the National Program for Medium- and Long-term Talent Development (2010-2020)¹³ was published as a guidance document for future work. In this document, high-level skilled workers are treated as one important talent group to meet the requirement of new industrial model and industrialized optimization, of which the objective and main measures are set. Improving vocational quality and vocational skills are the core in developing high-level skilled workers, with technicians and senior technicians as emphasis. A stimulus plan is also implemented to realize the objective. The plan focuses on the capacity building, including vocational schools and training bases.

Based on the national program, the Medium- and Long-term Strategy for High-level Skilled Workers Development (2010-2020) was published in 2011 by the ministries in charge of the work. The strategy is specialized in bringing up high-level skilled workers, although it also includes contents concerning ordinary skilled workers.

According to the strategy, the total number of skilled workers will be 125 million by 2015, among whom the number of high-skilled workers will get to 340 million (including 1.4 million senior technician, 6.3 million technicians and 26.3 million workers with advanced level skills), accounting for about 27%. By 2020, the total number of skilled workers will reach 140 million, among whom there will be 390 million high-skilled workers (including 1.8 million senior technician,

¹³ The national program was published by the central government. It is the first medium- and long-term strategy for talent development. The program is implemented under the guidance of the central coordination group of personnel which consists of 17 ministries, bureaus and organizations, including the Ministry of Education, Ministry of Human Resources and Social Security, Ministry of Finance and so on.

8.2 million technicians and 29 million workers with advanced level skills), accounting for about 28%. High-level skilled workers should take at least 30 days' skills research and knowledge study. At the same time, the development system of high-skilled workers will be perfected during the term.

The tasks mainly include the following four aspects:

As for bringing up and training system, enterprises should play a main role. Vocational schools are encouraged to cooperate with enterprises to meet the market demand.

As for the evaluation system, it will be oriented to vocational abilities and job achievement and will be based on production requirements.

As for the use system, it should be beneficial to stimulate high-level skilled workers' creativity, secure their social benefits and encourage their free flow in labor market.

Finally, it will create a social atmosphere of respecting labor, admiring skills and encouraging innovations, which will benefit the development of skilled workers.

2. Implementation advice

In 2010, the Implementation Advice on Promoting Vocational Training to Expand Employment¹⁴ was published. The advice believes that in the current situation, vocational training is a major way to improve labors' skill levels and the fundamental measure to solve the structural imbalance of labor market and stabilize the employment. Further, it is an inevitable demand of changing economic development model and improving enterprises' core competitiveness, as well as an effective way to integrate the development of both rural and urban areas. It points out that the current vocational training cannot meet the demand of market, although it has got a big achievement since the reform and open policy.

According to the advice, vocational training should be employment oriented and focus on skills upgrade in workers' lifelong time. When implemented, vocational training should integrate both rural and urban areas. The main purposes of vocational training at present and in the near future are to fit the requirement of expanding employment, improving employment quality and strengthen

¹⁴ The document was published by the State Council to all the ministries and local governments.

enterprises' competitiveness. Vocational training pursues a goal of making every person trained can get a job and making every person employed has the opportunity to attend training. During the 12th Five-year Plan, vocational training for high-level skilled workers can meet the demand for industry optimization and updates.

In order to achieve the goal, three major tasks are emphasized: operating a variety of vocational training, which includes employment skills training to increase employability, employees' skills upgrade training, entrepreneurship training and so on; improving the quality of vocational training; and strengthening financial support to vocational training.

3. Legislation

There is not a special law on vocational training yet in China. The matters of vocational training are mainly stipulated in three laws, namely Labor Law (1994), Employment Promotion Law (2008) and Vocational Education Law (1996).

The Labor Law uses one sector to regulate the matters of vocational training. The main contents are regarding responsibilities of the government and employing unit on vocational training. According to the law, the state takes various measures to promote vocational training and encourages and supports training institutions to implement vocational training. Vocational training development should be included in the plan of social and economic development of governments at various levels. Enterprises are required to establish training system, retain and use training funds to provide employees with chances of vocational training. The law also stipulates that for those skilled posts, workers must have skill trainings before working.

The Employment Promotion Law requires building a vocational education and training system that is open to all the workers. Other clauses regarding vocational training have the similar contents with that in the Labor Law.

The Vocational Educational Law mentions both vocational education and vocational training, but more focuses on vocational education. Regarding vocational training, it stipulates the types and levels of vocational training and basic requirement to establish vocational training institutions.

It should be pointed out that existing law clauses regarding vocational training are too abstract, which only have principal statements rather than material descriptions on how to organize and execute vocational training. It is not favorable for the long-term development of vocational training.

Section 3. CURRENT OPERATION SYSTEM

4.3.1. Providers

Providers of vocational training include: vocational schools, employment training centers, vocational training agencies run by private sectors and within-enterprises training institutions. Vocational schools and employment training centers provide public trainings.

Vocational schools are major places to train intermediate-level and advanced-level skilled workers. The student resources are young people completing their secondary education or upper secondary education. Usually, it takes 4 or 5 years for a secondary education graduate to obtain advanced-level skill certificate. The time is shortened to be 3 years for upper secondary education graduates.

Employments training centers and vocational training agencies run by private sectors have similar characteristics except for runners. They mainly offer training programs focusing on practical skills and adaptive training. Training programs are usually short-term ones within one year. Most of certificates trainees get are primary-level and intermediate-level. For both kinds of institutions, rural migrant workers and laid-off workers are the major trainee source.

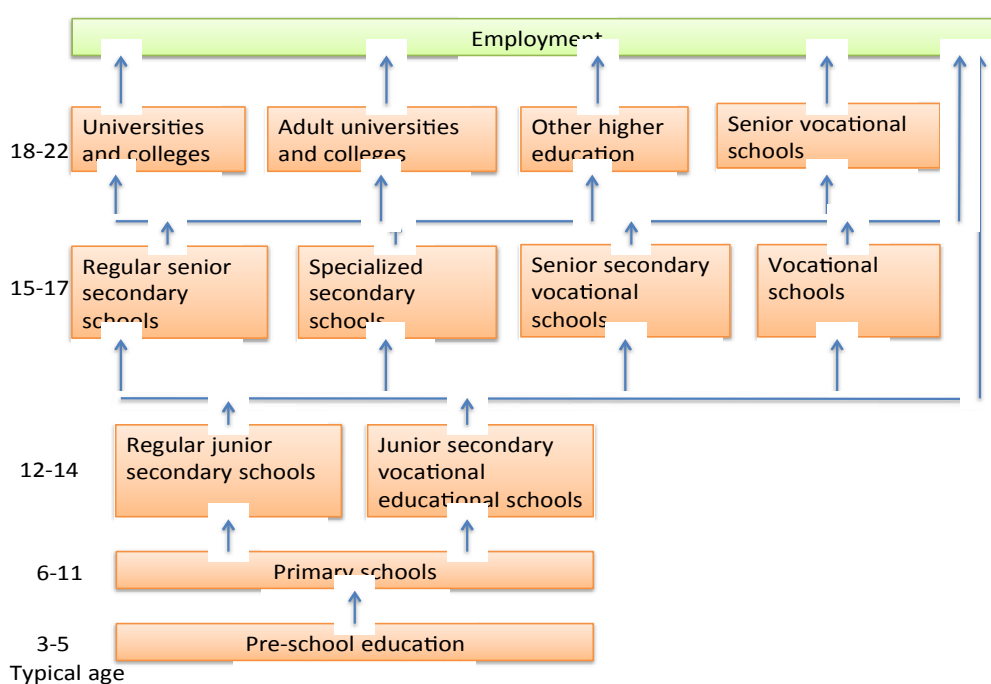
Within-enterprise training institutions are sponsored by enterprises, including training centers and workers and staff schools. Some enterprises have established their own technical schools to offer high-level training. Training within enterprises is very important for skills upgrade training. More than half of high-level skilled workers are trained within enterprises

Table 4.2 Vocational training providers in 2010

Providers	Runner	Units	Trainees (in thousands)
Vocational schools	Mostly run by the government, some run privately	2,998	8,894 ¹⁵
Employment training centers	Government	3,192	8,179
Vocational training agencies run by private sectors	Private sectors	20,144	11,557
Within-enterprises training institutions	Enterprises	More than 20,000	

Source: China Labor Statistical Yearbook 2011, Compiled by National Bureau of Statistics of China and Ministry of Human Resources and Social Security; the number of the vocational training facilities within enterprises is from Training and Employment (Edited by YU Faming, 2005, China Labor and Social Security Press)

Figure 4.2 Education and training system in China



Source: summarized by the author

¹⁵ The number includes 4210 thousand enrolled students and 4684 thousand workers who received training in schools.

4.3.2. Types and target groups

Vocational training can be classified into three types: employability skills training, skills upgrade training and entrepreneurship training.

1. Employability skills training

This type of vocational training faces those who are in search of jobs and those who want to participate in training. Trainees are usually required to reach primary level or above skill, or at least meet the post requirement. The employability skill training is employment-oriented and focus on practical operational skills training.

Table 4.3 Types of employability skills training

Types	Target group	Method and focus
Labor preparatory training	Youths in rural and urban areas who complete secondary education or secondary upper education but fail to enter further general education or give up the chance for further general education	Graduates with secondary education certification can enter technical schools or other training institutions based on their own choices of subject without taking exams. The period for secondary education graduates to reach primary level skills is one year, intermediate level skills two years. The period for secondary upper education graduates can be shortened. After pre-job training, they will be recommended for jobs. They can also enter technical schools for further study if passing exams.
Job-transfer training	Rural migrant workers who will not continue farming, or go to cities for working during spare time of farming	Focus on improving their job-transfer ability. Mainly provide primary level skill training. Encourage them to obtain vocational certifications.
Re-employment training	People who become unemployed. A big part of	Mainly provide primary level training based on the market demand. Improve their employability skills.

	these people are those who lost their job in former state-owned enterprises at their middle ages.	
Initial vocational training	Students enrolled in technical schools	Strengthen their practical vocational skills training and occupational quality

Source: summarized by the author

Besides, there are also vocational trainings for newly recruited employees through a kind of apprenticeship training and free vocational trainings for retired soldiers.

2. Skills upgrade training

This type of vocational training is to encourage enterprises to conduct vocational trainings in order to meet the new technology improvement and enterprises upgrading.

Table 4.4 Types of skills upgrade training

Types	Target group	Methods and focus
Skills upgrade training	Employees who already have some skill bases or with certain level skill certifications	Enterprises play a major role in training. Mainly through within-enterprises training such as: on-job training, off-job training, professional work research, skills competition and so on.
High-skilled workers training	Skilled workers who have higher skill levels or important for enterprises in technological innovation	In enterprises with high scientific and technological content, build senior technician studio and establish technician research system

Source: summarized by the author

Senior technician studio system will provide a platform both for technological innovation and training skilled workers. The tasks of senior technician studio are: promote technological innovation; develop new products; overcome technology difficulties; make improvement in importing new materials, new facilities and new technology; improve productivity; promote technological result to be transferred to market products; bring up high-skilled workers through apprenticeship or training classes.

3. Entrepreneurship training

This type of training is treated as a method to expand employment. It is mainly conducted through the project SYB (Start Your Business). Entrepreneurship, business projects guidance and business management training are provided. Besides, trainees can also get such support as small guaranteed loan, tax and fee reduction and so on.

4.3.3. Evaluation

The major evaluation system of vocational training is the National Occupational Skill Testing System established since 1993 for testing workers' skill levels and appraising qualifications. The purpose of the system is to better evaluate the effectiveness of vocational training, and to encourage workers to participate vocational training and build a channel for their career. It is also used as a promotion tool to strengthen the awareness of respecting skills in the society.

The system is under the guide of the Ministry of Human Resources and Social Security. Local governments take the charge of organizing and managing various occupational skill testing and certificate appraisal. There are three channels of testing facing different groups. Enterprises can conduct occupational skill testing for their employees, while trainees in technical schools usually attend testing within schools before graduation or during their training to get certificates. The third channel is a public one, which means that everyone can attend testing in public occupational skills appraisal instruction centers. Usually, the testing includes two parts, namely theory knowledge examination and practical skills test.

Trainees who pass the occupational skill testing can get skill qualification certificates. The certificate system comprises 5 levels, which are primary level, intermediate level, advanced level, technician, and senior technician. This 5-level certificate system is a new appraisal system for skilled workers that replaced the former 8-grade wages system. What is different is that the new system is not connected to workers' salary levels, that is, an intermediate-level skilled worker does not necessarily earn more than a primary-level one. Their payments are determined completely by the labor market.

In 2011, 17.46 million people attended the occupational skill testing, 14.82 million obtained occupational qualification certificates.

4.3.4. Finance

The financial resources of vocational training are from state fund, enterprises fund and training fees from trainees.

State fund is the major financial resource. The fund is called special employment fund, of which vocational training is one allocation destination, and the other two are public service posts and employment services. During the "Eleventh Five-year Plan" (2006-2010), 23 billion Yuan were invested in vocational training. The money is mainly used for various training subsidies. For example, a worker participating in training can get subsidy if he/she obtains the primary or above level certification. Usually the subsidy can cover a large part of the training fee. Enterprises can get subsidy if they send their new recruited employees to participate in vocational training. New graduates from poor families will get both living expense subsidy and training fee subsidy if they participate in pre-employment training after secondary education.

Enterprises are required to collect an amount of money from its expenditure equivalent to 1.5% of payment roll as education and training fund. Enterprises that have higher requirement for its employees' skills can collect 2.5% of payment roll. The fund is prohibited to be used for other activities. More than 60% of the education and training fund should be used for the training of front-line workers. Collection and usage of the fund are required to be open to all employees. For

those enterprises that cannot conduct vocational training, the fund will be collected by local government and used for training provided by public.

Training fees from trainees go to training institutions. For technical schools and employment training centers, training fees accounts for only a little part of financial resources. The large part is from the government allowance. While for vocational training agencies run by private sectors, training income accounts for more than half of their funds resources.

Table 4.5 Funds Resources of vocational training providers in 2010

Providers	Fund resources (in 100 million Yuan)				
Vocational schools	260.4 ¹⁶				
Employment training centers	19.1	Government allowance	17.2	Financial allowance	5.2
				Occupational training allowance	12.0
		Training income and other revenue	1.9		
Vocational training agencies run by private sectors	92.0	Government allowance	48.7	Financial allowance	6.0
				Occupational training allowance	42.7
		Training income and other revenue	43.3		

Data source: China Labor Statistical Yearbook 2011

¹⁶There are no details on the fund resources of vocational schools in the statistics yearbook. According to a document published in 1978 and revised in 1992, the fund resource of vocational schools run by the government and enterprises is from government allowance and company expenditure respectively.

4.3.5. Promotions

Promotions refer to all the policies, measures and activities the government applies that encourage enterprises and individuals to participate in vocational training programs, improve the status of vocational training and improve the benefits of trainers.

1. Preferential measures to trainees, enterprises and trainers

For trainees, policies focus on reducing their cost on training and increasing the value of training. Besides the subsidy measures mentioned above, some training institutions are trying to waive the tuitions to attract more trainees. In some vocational schools, training tuitions are free to all enrolled students, and some schools don't charge students with finance difficulties. The tuition gap is financed by the government allowance. In order to make vocational training more attractive, employment is paid much attention to. Trainees can talk with staffs and get guides on choosing professional fields. After graduation, they can get recommendation during searching jobs.

For enterprises, if they recruited registered unemployed workers for those posts that require skilled workers and sign labor contracts for more than one year, it is possible for them to apply for training subsidies. In some areas, enterprises are encouraged to train migrated rural workers through on-job-training or in trusted training institutions. Small enterprises can get more subsidies if they conduct job rotation and skills training instead of laying off workers.

Trainers of vocational training in public training institutions usually don't get the same recognition as teachers in general academic schools, especially in the application of professional titles. Senior professional title is the highest title for teachers, researchers, engineers and so on. In the past, there was no way for vocational trainers to apply for senior professional titles, which had been a big obstacle for their career development. Since 2010, a new trial has been carried out, which set up senior professional titles in some technical schools, to attract more excellent trainers. In places with good economic conditions, trainers can be awarded based on their performance. Trainers are also encouraged and supported to continue their own education to acquire a master's degree.

2. Vocational Skills Contests

Organizing vocational skills competitions is another method to strengthen the atmosphere of respecting skills and skilled workers among the public and attract more youths to choose the way of being skilled workers.

In 2011, China participated the 41st World Skills in London for the first time. World Skills is the largest skills competition, jobs and careers event in the world. Six Chinese contestants who are selected through skills contests in China participated in six events, including skills contests of welding, numerically controlled lathe, CNC milling machine, CAD machinery design, cosmetology and hairdressing, and website design. The team won one silver medal and five winning awards, ranking the second on the average scores among 51 teams. Contestants winning awards received high respect and were rewarded. Besides bonus, they were entitled “National Technical Experts”.

Inside the country, 29 national-level skills contests and hundreds of local contests were held in 2011. Tens of millions of technical students and workers participated these contests. 269 of them were entitled “National Technical Experts”. 990 contestants were promoted to technicians and senior technicians as an exception. Local government and enterprises also have various awards to them.

Now vocational skills contests have become more and more popular. Lots of students and workers view it as a faster way to get senior qualification certificates, and more importantly, seek to get admitted by the industry.

Section 4. PROBLEMS ASSESSMENT

4.4.1. Low market recognition

Vocational training has been in a low status for a long time. The reasons include cultural traditions, education policy, consumer bias, and so on.

Chinese traditional culture tended to emphasize on literature and social science, but relatively look down on technical and practical learning, which is similar with that of UK. Traditionally, craftsmen and businessmen were in lower status in society than government officers and scholars. As a result, education was thought to bring up elites but not ordinary workers. Although the situation is changing now with the development of market economy and people are forced to face the severe

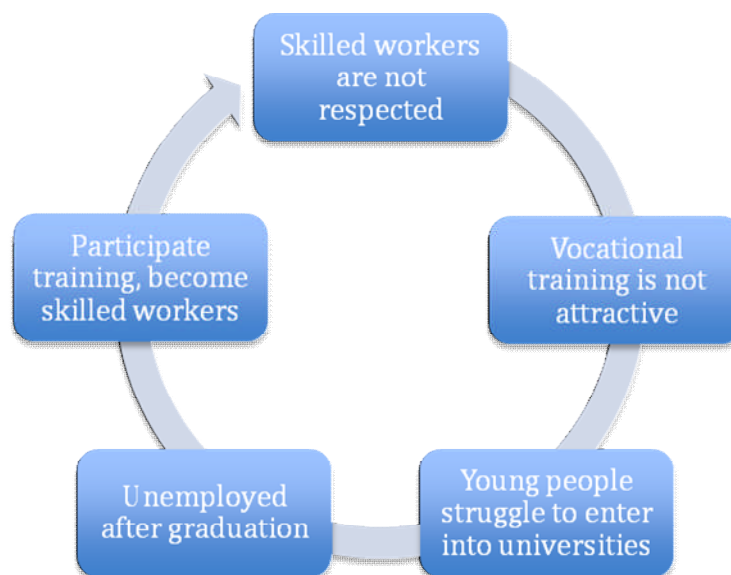
unemployment situation, lots of people still think receiving vocational training and working with those migrated rural workers is a kind of shame.

Several education reforms since the foundation of the country lead to the same result, which is seeking for academic degrees. With the thought of “the higher degree, the better”, students struggle in a fierce competition for entry into universities, disregarding their interest and career plan in the future. Facing the shortage of university capacity, the college expansion plan was put into practice since 1999. As a result, more secondary education graduates get opportunities to universities and colleges. On the other hand, plenty of courses that are irrelevant to market were set up. Consequently, hundreds of thousands of high education graduates without any practical skills are thrown into labor market and become unemployed.

“One child policy” attributes to the bias on vocational training. All the parents hope that their only child can enter into a famous university. They would like to invest everything on the child’s education. Especially for those rural residents, entering a university seems to be the only way to change their destiny.

Actually, vocational training has fallen into a vicious cycle:

Figure4.3 Vicious cycle of vocational training



Source: summarized by the author

4.4.2. Low investing willingness of enterprises

Enterprises know best what kind of skills are needed and how to train their employees. They also benefit directly from vocational trainings. However, few enterprises have high willingness of investing in human resources development, especially lots of SMEs in manufacturing and construction industry are not willing to invest training their employees.

One reason is that those small enterprises that employed most of migrated rural workers are labor-intensive enterprises. The nature of their business has low requirement for skills. Many workers are just trained simply for one or two weeks before working. During 1990s and the first half of 2000s, there was adequate labor force supply in labor market. Enterprises were never afraid of the shortage of workers. A corresponding phenomenon is that the frequency of work accidents is high due to lack of training of workers. The training should teach workers how to operate machines appropriately or how to protect themselves against dangers in working environment.

The second reason is the high turnover of workers. Many migrated rural workers go to cities to work seasonally. It is not certain for them to go back for the same job next year. Employers may think it is a waste to train these workers. In other situations, employers avoid to sign labor contracts with workers to reduce cost on social security. It is particularly true in construction industry. More than half of all workers did not have employment contracts before the implementation of new labor law in 2008. They are called temporary workers. Sometimes their payment cannot be guaranteed, let alone receiving training. Even in more regular enterprises, in which the working periods of employees are more certain and longer, employers are reluctant in investing in human resources, worrying about skills poaching. Not like in Japan where company loyalty is highly recognized and respected, in China, job-hopping is quite often. Without commitment in training employees, it is easier for employers to lay off workers, which deteriorates the situation.

The third reason is from the heavy burden born by enterprises. One kind of burden is the expense on social security. According to the new Labor Law, enterprises are required to pay social security fees for employees including temporary workers. The fees should cover payment on endowment insurance, medical insurance, and injury insurance. The total payment may be equal to

half of a worker's salary. Social security system benefits employees, but from the employers' point of view, it increases the cost of human resource. Another kind of burden is taxes and fees that is the main one for SMEs. According to surveys by some research institutions and media, approximately half of profit of middle- and small sized enterprises is paid for various taxes and fees. Especially for manufacturing enterprises, the profit has been squeezed to a very low point. SMEs, which provide 65% of all job posts, are facing more serious situation than state owned and big enterprises. With the increase of labor force salary, SMEs are struggling to survive. In this situation, employers are reluctant to spend extra money on training.

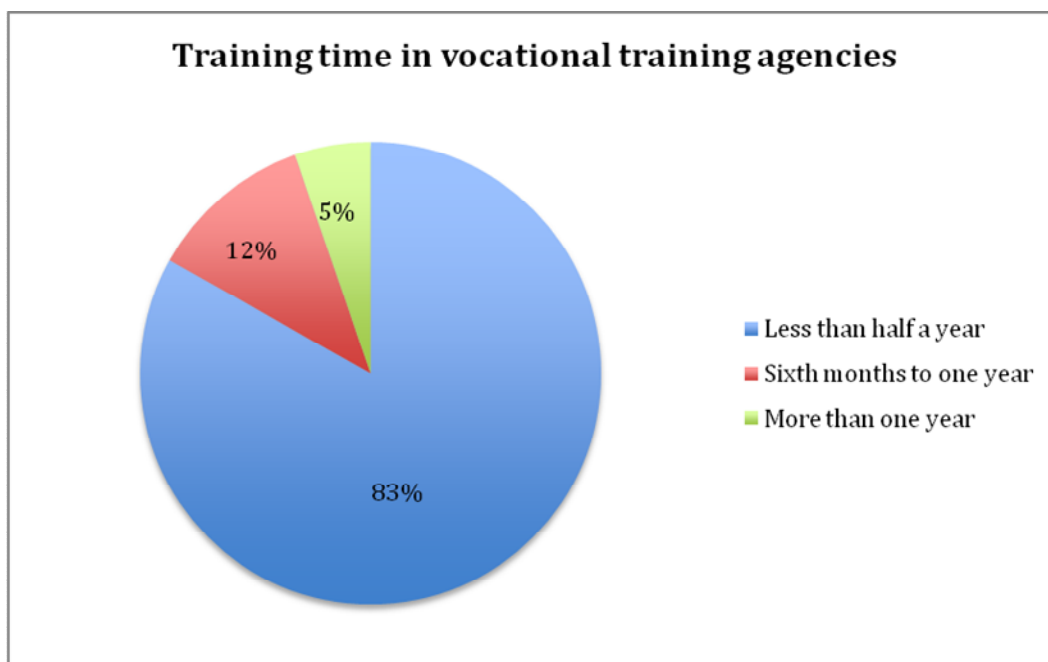
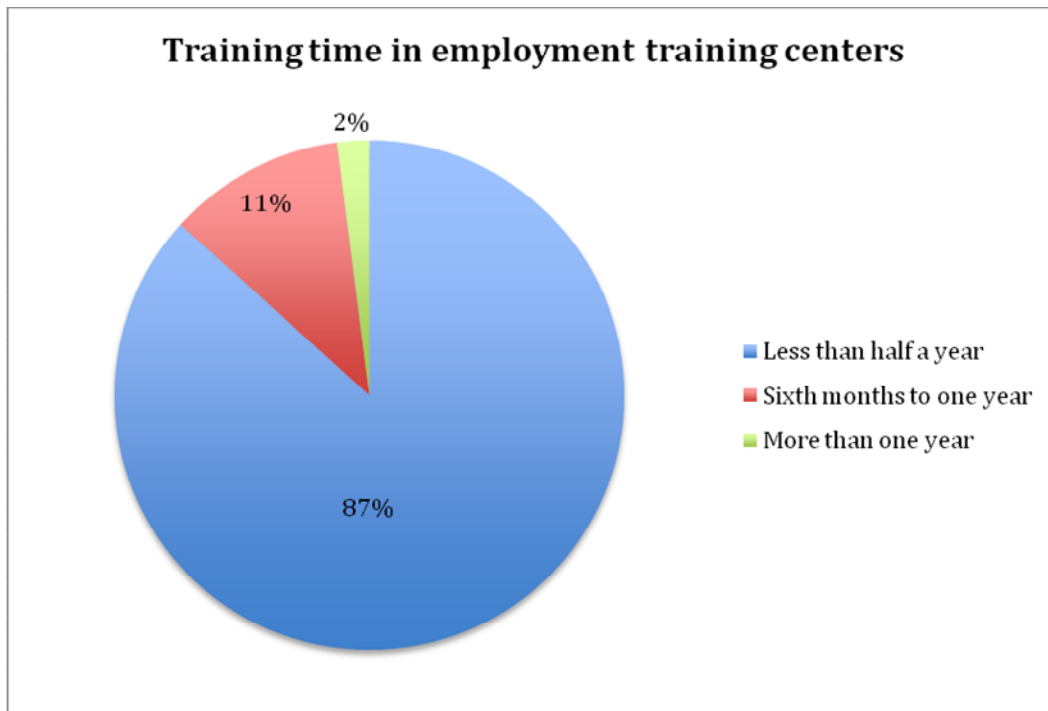
Finally, the shortsighted view in development strategy prevailing in enterprises causes the reluctance in training new recruits. Some scholars argue that many enterprises in China are eager to get quick profits at present. Few of them have the plan to lead the companies for a longer time. Short-term profit is the most important index for them. Traditional enterprises squeeze the labor cost as low as possible to maximize the profit. New and high technical enterprises are engaged in making beautiful financial statements to attract venture capital. In this situation, no one cares about seriously investing in human resources for longer-term advancement. This phenomenon is also described as the "lack of entrepreneur spirit", which has hindered the emergence of first-class enterprises.

4.4.3. Not high quality of training for the public

Employment training centers and vocational training agencies run by private sectors bear the main responsibility of taking and training workers from the society. They have made a great contribution in improving the employability of workers, laid-off workers and rural workers in particular. However, the real quality of the training is not high, although most of trainees have obtained certificates at various levels.

Take the training time as an example. According to the statistics, those who attend the training for less than half a year are the majority. It is hard to believe that the skills levels of trainees will be improved much in such a short time.

Figure4.4 Training time in employment training centers and training agencies



Source: China Labor Statistic Book 2011

In fact, lots of trainees get training only for one or two months. Some posts have the minimum requirement for training. Once they think it is possible to enter the industry, trainees would not like to continue their training that costs money and takes time. There are also trainees who think the training is useless or of little help for their jobs, thus give up the training. In the viewpoint of trainees, if they spend one month in training, which means that they lose one month's earnings, but study and master little things, it is not worth attending the training.

Unfortunately, the training contents provided in many training centers and agencies are far from satisfying trainees and employers. One reason is that vocational training supported by government has the prevalent characteristic. The first purpose is to cover people as many as possible. Sometimes, it cannot give much consideration to high-end service. But even in low-end service, quality should be paid more attention to. This brings out the second reason. Vocational training requires lots of careful work, including research on market research, characteristics of trainees, and so on. However, it is hard to expect that training centers can complete the tasks. For some local training centers, it is the official order that push them to finish annual training tasks. They consider little on the purpose and effectiveness of the training. Market oriented training contents and carefully designed training programs are seriously in short.

4.4.4. Credit risk of certificates appraisal system

As mentioned above, skill testing and qualification certificate appraisal system has three channels for three groups, namely technical school students, employees and social public. Among these three channels, public channel in occupational skills appraisal instruction centers testing is the most popular one. But now the credibility of qualification certificate appraised by these appraisal instruction centers is in suspicion.

Under the guide of local government, occupational skills appraisal instruction centers are profit-making institutions. Their profits are directly connected to the number of certificate appraised. The more certificates they appraise, the more fees they can charge. Therefore, little attention is paid to the quality of certificates. Another drawback is that the testing and appraisal are out of practical

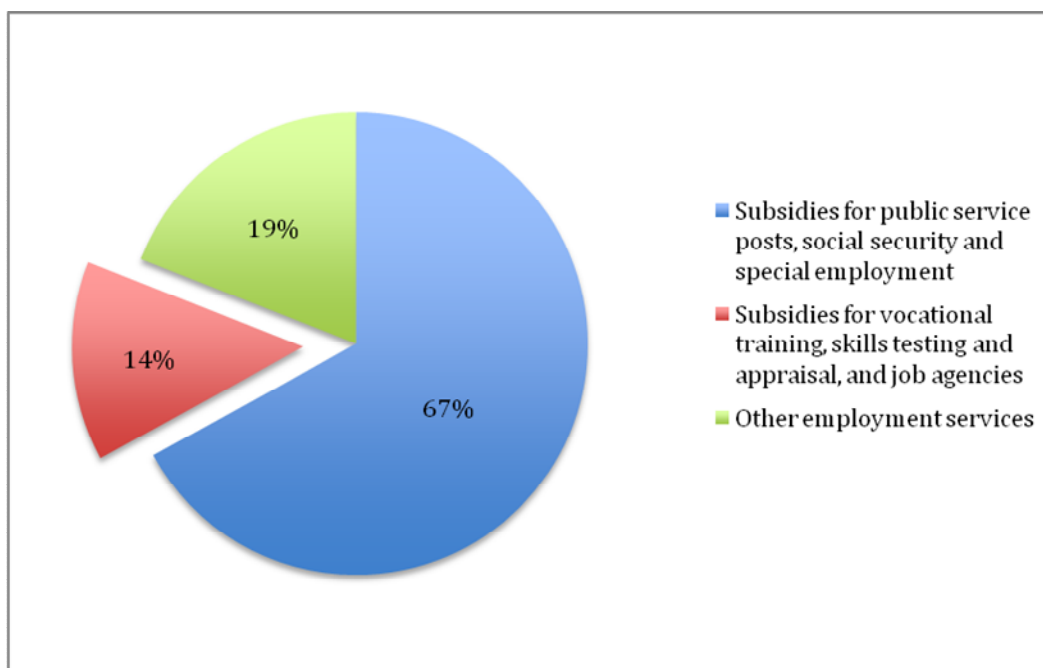
activities of enterprises. They either emphasize too much on theoretical knowledge or cannot meet the skill standards of enterprises.

Correspondingly, although obtaining technician certificates or senior certificates, skilled workers cannot get relative acceptance by enterprises. Some of them even cannot be employed. On the other hand, it is difficult for lots of front-line workers with high skills to obtain certificates because the testing way is too limited.

4.4.5. Low cost efficiency of the fund

Fund used in vocational training is from special employment fund allocated by central and local government. Special employment fund was established since the starting of active employment policy in 2002. During the “Eleventh Five-year Plan”, 225.6 billion Yuan were invested as special employment fund. The fund is mainly allocated in the form of subsidies to public service posts, social security, vocational training, and other employment services.

Figure4.5 Allocation of special employment fund



Data source: www.mohrss.gov.cn

Among these expenditure items, the first category, namely public service posts, social security and special employment, aims to provide job opportunities for people experiencing difficulty in finding jobs, including disabled people. Spending on these items accounts for 67% of the special employment fund, more than half. Although these measures can solve the employment problem for some people temporarily, it is difficult for his kind of special employment to turn into regular employment. The reason is that the subsidized group should be too big and the policy is not a long-term one. Thus, high investment but weak sustainability leads to low cost efficiency.

On the other hand, vocational training and job agencies service, which are effective measures to promote real employment, compose only 14% of the special employment fund. Job agencies service, focusing on providing employment information, can only reduce frictional unemployment, not structural unemployment. While vocational training, the most active and basic work in employment service, is engaged in improving workers' quality and skills, which can solve the employment dilemma effectively with low investment. However, during the "Eleventh Five-year Plan", only 23 billions Yuan were spent in vocational training, accounting for about 10% of the special employment fund.

A desire for quick return leads to the partiality. Compared to developing and allocating public service posts, implementing vocational training is more complicated and time consuming. It is also more difficult to measure the results quantitatively. No complete transparency in spending the fund is another factor that attributes to the tendency that local employment service institutions are reluctant to promote vocational training, but willing to provide public service posts. The subsidy on training one person is much lower than that on one public service post. It is easy for the subsidy to become a tool to make money in some institutions without appropriate supervision.

Section 5. CHAPTER SUMMARY

In this chapter, we introduced the development of vocational training in China and its current operation system. Then we analyzed the problems facing vocational training, including:

- There is not a special vocational training law.
- The market recognition of vocational training is still low.

- Enterprises, especially SMEs are unwilling to invest in vocational training for employees.
- The quality of vocational training is not high.
- The evaluation system of vocational training lacks credit and is not effective to reflect workers' real skill levels.
- The expenditure structure of fund on vocational training is not reasonable.

CHAPTER 5. RECOMMENDATIONS

With the socioeconomic reform and development going deeper, vocational training will play a more and more important role. A perfect and effective vocational training system is essential for economic sustainable development. In this chapter, recommendations will be given to improve current vocational training exercises in China based on the analysis in previous chapters.

Section 1. STRENGTHEN THE CAPABILITY

In order to meet the market demand for skilled worker at present and in the future, at the same time meet the requirement of improving the quality of labor force, the vocational training capability should be strengthened. There are two considerations.

The first one is to fill the training capability gap for senior technicians and technicians which was analyzed in Chapter 2. In order to achieve the goal, it is recommended to establish training centers focusing on training high-level skilled workers. The training centers will be built in those regions that have a large demand for high-level skilled workers. They can be built based on existing training institutions with good conditions. One training center can train at least 1,000 senior technicians and technicians. The capability gap during 2009-2020 is 2,040 thousand workers. Therefore, extra capability of 204 thousand workers is needed a year in average. Thus, at least 204 training centers should be built.

Table 5.1 Estimated investment of the central government

Number of training centers	Capability each center (in person)	Investment from the central government (Yuan)	Total investment (Yuan)
204	1000	5 million ¹⁷	1,020 million

The second consideration is to accelerate the establishment of public vocational training bases to support training for SMEs. A public vocational training base is an institution which offers

¹⁷ It is estimated based on the government investment on similar programs.

vocational training programs, provides training utilities, and takes the responsibility of promoting skills updates. These training bases are open to enterprises, vocational schools and other training institutions. The major purpose of public vocational training bases is to offer training programs that enterprises are not able to or reluctant to hold by themselves.

There are at least two benefits of public vocational training bases. Enterprises will benefit from these bases by making their employee trainings outsourced in training bases. Usually, public vocational training bases are equipped with sufficient and advanced training utilities. They have the capacity to hold training programs on skills at high levels. Compared with organizing training by themselves, the outsourced training will save enterprises' cost of purchasing training utilities and designing training courses for enterprises. The other benefit is for vocational schools and other training institutions. Training bases can provide both teachers and trainees with chances for productive exercises. As mentioned before, many teachers in vocational training institutions lack practical experiences on the front line. Trainees also face the difficulty in finding places for intern activities. All these problems can be solved in public vocational training bases.

Public vocational training bases can be built based on existing vocational training institutions, such as vocational schools and within-enterprises training institutions. The financial resources are from both the government and training institutions. They can also be newly built from scratch and financed by the government investment. The cost of building public vocational training is from several million Yuan to hundreds of million Yuan based on sizes and utilities. The estimated time for building public vocational training bases is not more than 3 years. If governments at all levels accelerate the establishment of public vocational training bases, it is possible to build a network of public vocational training bases of different sizes nationwide by the end of 12-Five Year Plan.

Section 2. IMPROVE THE QUALITY OF VOCATONAL TRAINING

Like any other products or services, vocational training should give the priority to improve its quality. In order to improve the quality, three measures are recommended.

5.2.1. Emphasize market orientation to increase training effect

1) Emphasize market research

The effect of vocational training depends on whether it meets the requirement of labor market. Therefore, when drafting up training plans, the most important thing is to make practical and detailed marketing research. The plans should be based on the real requirement of workers for vocational training, combining the training resources and capacities. Now the human resources departments are making labor market monitoring and surveys periodically. The surveys include information on labor supply and demand, as well as the forecast of training demand based on the survey of the situation of industrial restructure and employment in enterprises. Vocational training institutions can use the information to formulate training plans.

2) Improve employment services

Employment services consist of vocational training information consulting, vocational guidance, vocational agencies services, and so on. These services are like the pre-selling consulting and post-selling services of any products, in order to meet the needs of trainees better.

Market demand for skilled workers, in terms of quantity, industry and level, keeps changing. It is not easy for individual workers to survey or forecast it. Therefore, employment department should publish supply and demand information of human resources market and guide workers to select vocational training based on the market demand and their own situation.

Employment services are provided through the public employment service system. Although with several years building, the system has not yet realized the objective of covering both urban and rural areas. The local employment and social security public services platform is not available in some disadvantaged regions. For these regions, the first task is to complete the building of this service system. As a kind of active employment service, local public services platforms should know about the training demand, collect and publish training information, and organize workers to take vocational trainings and vocational skills appraisal. After trainings, workers should be provided with various employment information and guidance to realize being employed.

3) Try out new apprenticeship system

New apprenticeship system emphasizes the cooperation between vocational institutions and enterprises to tie the training to employment closer. Vocational institutions hold training programs according to the needs and requirements of enterprises. A training contract can be signed between enterprises, vocational training institutions and trainees. Based on enterprises' requirements, vocational training institutions undertake training tasks. Trainees take their practical exercises in agreed enterprises and should be employed by these enterprises. Under this pattern, training teaching resources in both places can be shared by each other. For training institutions, they do not need to spend much time on finding places for trainees to get practical excises. For enterprises, the systemic training in vocational schools will save their time and money on organizing training courses. Besides, trainees will meet their requirement better. During the experiment of the new system, leanings can be gained from experiences in other countries like Germany and Switzerland.

The trial on new apprenticeship can start from regions and cities that have large demand of skilled workers and there are a lot of enterprises which can provide apprenticeship places. If there comes out good result, the trial can be expanded in to wider areas. In order to build a rather complete system, a series of regulative work will be needed.

5.2.2. Strengthen training of teachers

The level of teachers in vocational training institutions is an important factor to determine the quality of vocational training. In China, the number of production guide teachers is about half of teachers of cultural and technical theory. Among all teachers for cultural and technical theory, the senior-level teachers accounted for 25.26% in 2010. This proportion for production guide teachers was only 11.55% in 2010. The proportions in other vocational training institutions are even lower. In order to improve the whole level of teachers, there are two considerations.

The first consideration is to enhance teachers' teaching abilities on practical skills in order to guide trainees better. One way is to arrange teachers to attend the production activity in workshops.

The other way is to invite engineers and high-skilled workers in enterprises to take charge in teaching students practical exercises.

The second consideration is to insure the career development of teachers. It means that more senior professional positions will be open to them. A similar promotion channel with that of general academic teachers should also be designed for training teachers to attract more excellent teachers and keep them in training institutions.

Table 5.2 Situations of teachers in vocational schools in 2010

Types of teachers	Number (in person)	%
Total teachers and staff (excluding part-time teachers)	258,254	
Teachers of cultural and technical theory	127,032	
#Senior lecturers	#32,093	25.26%
Production guide teachers	62,854	
#Senior	#7,261	11.55%
All-round teachers	52,377	
Part-time teachers	43,535	

Source: Chinese Labor Statistics Yearbook 2011

5.2.3. Improve the skills evaluation system

The problem of skills evaluation system is the low quality of the certificate appraisal. In order to regulate the occupational skills appraisal and increase its credit, following points are recommended.

The first one is to transfer the right of occupational skills appraisal from appraisal centers under governments to enterprises. As mentioned in the forth chapter, occupational skills appraisal done by the appraisal centers is far way from the reality of enterprises. Enterprises are reluctant to employ some workers who have obtained skill certificates. At the same time, many skilled workers working at the front line cannot obtain relative certificates. Therefore, evaluation of skilled workers should be done mainly by enterprises. Enterprises will evaluate the demand of business and skilled

workers' achievements to entitle certificates to their employees. The evaluation results will be connected to workers' payments. Thus, the leverage function of occupational skills appraisal can be played better.

Guangdong province is the first province that develops the system of enterprises skilled workers evaluation that has proven very effective. Under the system, the evaluation is based on the achievement of workers, emphasizing their core ability and skills levels, not limiting on workers' degrees and experiences. During the evaluation process, connect the state occupational standards and enterprises real requirement, skills examination and working performance. At the same time, emphasize the responsibility of the government and enterprises for the occupational skills appraisal to guarantee its authority. At last, the evaluation reflects workers' payment, integrating the process of evaluating, employing and paying.

The second one is to strengthen the quality management of occupational skills appraisal. Since the appraisal centers are the main places to make social certificate appraisals, the quality of the centers should be assured. Those appraisal centers that cannot meet the requirements should be stopped holding appraisal activities. The tendency of making profit through certificate appraisals should be avoided. One considerable way is to turn appraisal centers into independent non-profit units. They will be operated like other public non-profit organizations and financed by the government investment.

Section 3. INCREASE THE AWARENESS OF VOCATONAL TRAINING

A broad and high respect on vocational training is the basis for its development. It is not easy to change the cultural bias on labor work that has been shaped for many years. Therefore, measures should be taken to increase the awareness of vocational training is and create an environment with high reputation to skills labor.

Advertisements and events are ways used most for improving the awareness of a product. The more information people receive, the more aware of the product them become. The more positive the information is, the more eagerly people want to try the product. This rule can also be applied to promote vocational training.

Firstly, the achievements of high-skilled workers and the rewards they have got should be highlighted in advertising. High-skilled workers, who have already made great contribution in their fields, can be seen as the brand product of vocational training. With their remarkable performances and high reputation among the public, those high-skilled workers are the best advertisement endorser of vocational training. Their success experiences through learning and using skills have a wide and positive influence on the working labors of the society. Advertisement on high-skilled workers will strengthen people's confidence in choosing a career as being skilled workers.

Secondly, bring more attention to the events about vocational training. The recruitment of new students in general universities is always a hot topic every year, but less attention is attached to the recruitment in vocational schools. This may attribute to the phenomenon that those students feel a shame to enter vocational schools. Furthermore, lots of activities of vocational training are limited within one city or one district. Therefore, more effective communication is needed to promote vocational training.

As for communication channel, the Internet is strongly recommended. The Internet popularity in China has reached 38.3% in 2011 with 513 million net users. More than half of net users are using Weibo which is a communication platform like twitter. The communication effectiveness of news is stronger than TV and newspaper. More and more enterprises, organizations and institutions are registered on Weibo. For rural migrant workers, the Internet is also an important tool for communication and leisure. According to The Rural Migrant Worker Report in China 2008, the increase rate of net users in rural areas is 60% in 2008, much higher than that of 30% in urban areas. 18% of rural migrant workers used the Internet to look for jobs, twice as much as last year. The Internet is the most used for communication except for mobiles. Therefore, the Internet and Weibo is an effective communication tool. Moreover, the cost is also much lower than traditional ways.

Section 4. ESTABLISH A SPECIAL LAW

Specialized vocational training laws, which put all of the factors of vocational training under regulation, will raise vocational training to a higher level in the national development strategy.

Experiences in Germany and Japan indicate that a complementary legal framework is indispensable for building an innovative and high-quality vocational training system. It is also an appropriate way to realize the value of vocational training. It is also proven by the fact that vocational education, which has the specialized law, has got better advancement than vocational training in China. Therefore, a specialized law is in serious need for vocational training.

The law should include the detailed contents on various factors of vocational training. The concrete rights and responsibilities of stakeholders of vocational training should also be written in the law, rather than just principal stipulations.

Section 5. MAKE A MORE REASONABLE INVESTMENT STRUCTURE

Efforts on making a more reasonable investment structure contain two aspects:

The first one is to increase the proportion of vocational training expenditure in the entire special employment fund. Now the vocational training expenditure accounted for 14% percent. Considering the importance of vocational training, it should account for at least the same proportion as other two parts of the special employment fund by 2020. One considerable solution is to decrease the subsidy amount on introducing the public service post or providing the employment agency service for each person, but to increase the amount on training each worker.

The second one is to make a more strict supervision on vocational training fund.

A public and transparent management system is essential for the effective usage of the fund. The integrated vocational training information management platform will be helpful to realize the dynamic management to vocational training institutions and trainees. Improvement in training information sharing will also avoid the behaviors of cheating for training subsidies. In order to make a full use of training subsidies, subsidizing trainees and enterprises directly is better than subsidizing training institutions. Training card is one form that is experimented in some regions. Workers who are fit for the requirement of receiving training subsidies can get a training card, which enables them to choose training institutions and training courses based on their own conditions. This measure can also motivate training institutions to improve the quality of their training programs. The safety of

training fund should be assured through strict examination and audition. Those who embezzle the fund must be affixed the responsibilities.

CHAPTER 6. CONCLUSION AND FUTURE OUTLOOK

This thesis analyzed the situation of the labor market in China and concluded that skilled workers are in a serious shortage on the labor market. Through the analysis on the benefits of vocational training, it is concluded that vocational training is an appropriate way to meet the demand of labor market. The thesis then introduced the vocational training in China and pointed out its problems. At last, the thesis gave recommendations on improving the vocational training operation under current situation.

For the future research, the following issues should be considered:

1. The development mode of vocational training in future. The measures undertaken now are mainly for meeting the emergent requirement. It should be considered under the context of the human resources development strategy for a long term.

2. How to make enterprises play a bigger role in vocational training. In any modes, the participation of enterprises is essential for operating vocational training successfully. Regulating the responsibilities and establishing an mechanism for enterprises participating vocational training should be considered.

References

Books and papers

- [1] European Centre for the Development of Vocational Training, The benefits of vocational education and training, Luxembourg: Publications Office of the European Union, 2011
- [2] Harry J. Holzer and Robert I. Lerman, America's forgotten middle-skilled jobs, Written for the Workforce Alliance, Washington, DC, as part of its Skills2Compete Campaign, 2007
- [3] Huang Yiping and Jiang Tingsong, What Does the Lewis Turning Point Mean for China? A Computable General Equilibrium Analysis, China Center for Economic Research Working Paper Series, No. E2010005, 2010
- [4] Kathrin Hoeckel, Costs and Benefits in Vocational Education and Training, OECD, EDU/EDPC/CERI (2008) 3
- [5] Stephen L Jen & Fatih Yilmaz, China's 'Lewis Point' and its Impact on the World, SLJ Macro Partners LLP, 2010
- [6] Jack Keating, Veronica Volkoff, Jane Perry and Elliot Medrich, Comparative study of vocational education and training system, National Centre for Vocational Education Research (NCVER) Ltd, 2002 National medium- and long-term talents development planning summary
- [7] Jon Lauglo, Vocational training: analysis of policy and modes-Case studies of Sweden, Germany and Japan, Paris, 1993 International Institute for Educational Planning (established by UNESCO)
- [8] National Skills Coalition, Training Policy in Brief- An Overview of Federal Workforce Development Policies, Washington, DC, 2001 Edition
- [9] Man Gon Park, Building Human Resource Highways through Vocational Training, Responses to the Challenges of the Labour Market and the Work-Place, Bonn, 8-10 September, 2005
- [10] Lourdes R. Quisumbing and Joy de Leo, APNIEVE, LEARNING TO DO Values for learning and Working Together in a Globalized World, UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn, Germany, 2005
- [11] Wang Dewen, Cai Fang, Gao Wenshu, Globalization and Labor Mobility within China: New Trend and Policy Implication (The Chinese original title is 全球化与中国国内劳动力流动：新趋势与政策含义), Working Paper Series No.48, 2005
- [12] Wang Qing, He Hongzhe, Chinese Economy before 2020 (II) (The Chinese original title is 2020年前的中国经济(二): 劳动力供应依然充裕): Labor Supply is Still Sufficient, Morgan Stanley Asia Limited, 2010

Statistics materials

- [13] Department of Population and Employment Statistics of National Bureau of Statistics and Department of Planning and Finance of Ministry of Human Resources and Social Security, China Labor Statistic Yearbook 2011, China Statistic Press, 2011
- [14] National Bureau of Statistics of China, China Statistic Yearbook 2011, China Statistic Press, 2011
- [15] National Bureau of Statistics of China, 2010 Sixth National Population Census Major Data Bulletin, 2011
- [16] National Bureau of Statistics of China, 2011 Rural Migrant Workers Survey and Monitoring Report, 2012

Chinese published documents

- [17] National Program for Medium- and Long-term Talent Development (2010-2020), [2010] No.6

- [18] Medium- and Long-term Strategy for High-level Skilled Workers Development (2010-2020), [2011] No.11
- [19] Implementation Advice on Promoting Vocational Training to Expand Employment, [2010] No.36

Internet articles

- [20] <http://www.mohrss.gov.cn/page.do?pa=402880202405002801240882b84702d7&guid=3474937504c143678b42689a3d2a748e&og=8a81f0842d0d556d012d11155d8c0043>
- [21] http://www.stats.gov.cn/tjfx/fxbg/t20120427_402801903.htm